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AMERICAN PATENTS.

List of American Patents which issued in the month of April, 1849, *with Exemplifications, by* CHARLES M. KELLER, *late Chief Examiner of Patents in the U. S. Patent Office.*

Continued from page 387.

51. For an *Improvement in the Manufacture of Twine;* William C. Noyes, City of New York, assignee of Thomas G. Boone, Brooklyn, New York, April 10.

The patentee says,—"The nature of my invention consists in applying liquid glue or starch, or any convenient combination or composition of these or other analogous substances, to cotton threads or yarns separately, in combination with twisting said threads or yarns collectively into twine or small cords, while the threads or yarns are wet with said substances, thereby rendering the twine or cord more compact or strong than by any known process."

Claim.—"I disclaim the substances used as sizing separately, and I also disclaim the manner in which it is applied separately; but I claim the two processes combined: that is to say, I claim the saturating of the cotton yarns or strands separately, with gelatin, gluten, starch, or glue, or any convenient combination or composition of these or any other viscous or analogous substance, while in a liquid state, preparatory to, and for the purpose of, being twisted, and, in combination with the twisting the said cotton yarns or strands, while so wet and saturated at one operation, into twine or cord, thereby producing the results set forth; and therefore, by so twist-

ing it, in combination with the saturating of the yarns at one operation, I both save time and expense in the process of manufacture, and at the same time produce a better article for the purpose of untarred wrapping twine than is produced by any other known process, thereby giving the article an internal saturation with these tenacious and preservative substances, which imparts strength as aforesaid, superior to a tar saturation, without the weakening and soiling properties of tar."

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52. For an *Undetachable Swinging Bottle Stopper;* Arch. H. Forbes, City of New York, April 10.

Claim.—"What I claim as new, is the manner of closing the mouth of a bottle by means of the undetachable metallic cap, having cork or india rubber, or both, placed in the top of the same, and secured to the neck of the bottle by means of the ring, the joint pins, and the grooves in the bottle neck, in the manner set forth."

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53. For an *Improvement in Churns;* Henry F. Baker, Centreville, Wayne county, Indiana, April 10.

Claim.—"What I claim as my invention, is the particular manner in which I have combined and arranged the parts, so as to adapt them to the churning of cream, as set forth: that is to say, I claim the combination, upon the same shaft, of two spiral float wheels, so arranged as to force the cream from the ends of the churn box towards the centre, as described."

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54. For a *Folding Centre Board;* John M. Hoffman, Buffalo, New York, April 10.

The patentee says,—"The nature of my invention consists in constructing centre boards to be attached to flat bottomed vessels, which can readily be folded up, to allow the vessel to pass over a bar or shallow place, and may, without inconvenience, be unshipped at any time and taken on board, either to repair damages or for other purposes."

Claim.—"What I claim as my invention, is suspending in a jointed frame a centre board, composed of one or more pieces, capable of being turned with either their edges or sides to the bottom of the vessel, and with the frame folded up against, or projected down therefrom, as set forth, whether the several parts be arranged as described, or in any other similar manner. And likewise, hanging the above claimed apparatus so that it is capable of being turned obliquely across the keel, for the purpose of counteracting the lee-way of the vessel, as set forth."

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55. For an *Improvement in Machines for Cutting Gaiter Boots;* William Snell, Easton, Northampton county, Pennsylvania, April 10.

Claim.—"I claim as my invention, the machine with heads, with or without a division, with patterns adapted to its use, consisting of cutting and moulding ladies' and gentlemen's gaiter and half-gaiter boots, to any size, of any material, without a seam; thereby saving fifty per cent. in labor, and surpassing the old plan in neatness and durability."

56. For an *Improved Air Engine;* Francis J. Lauberau, Paris, France, April 10; (anté dated October 30, 1847.)

The patentee says,—"The principle or character of my invention consists in making the plunger hollow, with its external and internal surfaces, made of some good conductor of caloric, separated by a non-conductor, the said plunger being adapted to move within a surrounding cooling vessel, and so combined with a heating vessel, made of some good conductor of caloric, and heated by the application of heat internally, that the said hollow plunger shall alternately cover and uncover it, and thus cause the contained air alternately to pass over the heated surface, to dilate it, and then over the cold surface, to contract it; the said surrounding vessel being in connexion with a cylinder or other vessel to which is adapted a working piston."

Claim.—"What I claim as my invention, is combining with the surrounding cooling vessel a hollow plunger, made with its external and internal surfaces of some conductor of caloric, separated by some non-conductor, in the manner and for the purpose specified. And I also claim the hollow plunger, as described, in combination with the heater which it alternately covers, as described, for alternately heating and cooling the air."

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57. For an *Improvement in Extension Tables;* Theodore Franck, City of New York, April 10.

Claim.—"I claim as new, the application to extension tables, of slides formed with alternate and interrupted tongues and grooves in the faces, to carry the weight off and on the table, and kept together by metal stops and slide-keeper pieces, having lips to operate in grooves on the edges of the slides, for that purpose, substantially in the manner described."

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58. For a *Revolving Cradle for Unloading Canal Boats or sections thereof;* John Elgar, Baltimore, Maryland, and Benjamin Hallowell, Alexandria, Virginia, April 10.

Claim.—"What we claim as our invention, is a revolving cradle, suspended on gudgeons, to receive and securely hold a boat, or section thereof; said gudgeons being attached either to a railroad truck, or the bail of a crane or other hoisting machinery, in such a manner that the cradle may be revolved to such an extent as to turn the boat or section upside down, as described."

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59. For *Improvements in Planes for Bevel Edges;* William H. Blye, De Ruyter, Madison county, New York, April 10.

The patentee says,—"The nature of my invention consists in attaching an adjustable hinged guard or fence to rebate, fillister, moulding, or other planes, by means of which the workman is enabled to bevel the edges of a piece of wood in an uniform manner, and at any given angle."

Claim.—"What I claim as my invention, is the manner described of planing the edges of pieces of wood of a beveled form, at given uniform

or varying angles, by means of an adjustable guard hinged to the plane stock."

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60. For a *Machine for Regulating the Twist and Diameter of Screw Augers;* Nath. C. Sanford and Lucius B. Smith, Meriden, New Haven county, Connecticut, April 10.

Claim.—"We claim as our invention, the raising upon, and securing to, the surface of level metallic or other plates composed of hard substance, wales or beads, running either in straight or curved lines, and operated substantially in the manner specified, for the purpose of forming and perfecting the twist of double and single twist augers."

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61. For a *Sliding Cut-Off Valve;* Simon P. Winne, Albany, New York, April 10.

Claim.—"I claim the method of constructing and arranging sliding valves of steam engines, with their corresponding openings into steam passages, together with the regulating apparatus attached to said valves, so as to operate the cut off valves by the same rod which moves the eduction valves; also as to permit the adjustment of the cut-off valves in such a manner as to close the steam passages at various preconcerted portions of the stroke, by hand gearing, during the oporation of the engine; all in manner and form as set forth."

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62. For an *Improvement in Fan Chairs;* Daniel Linzie, Petersham, Worcester county, Massachusetts, April 10.

The patentee says,—"My invention consists in combining bellows with rocking chairs or other seats, which bellows are operated by the motion of the seat, by a pedal acted upon by the foot of the occupant of the seat, or otherwise."

Claim.—"What I claim as my invention, is the manner described, of diffusing perfumes and producing currents of air, to fan and cool the occupants, of either stationary or rocking seats, by means of bellows and tubes, whether the several parts be arranged and operated as set forth, or in any other substantially similar manner."

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63. For an *Improved Rotary Gold Washer;* Harrison Parry, Pittsburg, Pennsylvania, April 10.

Claim.—"What I claim as my invention, is the application and combination of the helix or screw with a revolving cylinder, and the short strips at the upper end of the cylinder, in the manner and for the purpose named."

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64. For *Improvements in Planing Machines;* Hervey Law, Wilmington, New Hanover county, North Carolina, April 10.

Claim.—"What I claim as my invention, is combining with stationary cutters in a planing machine, reciprocating clamps, which increase their

pressure as the resistance to the advance motion of the board increases, in such manner that said clamps give a rapid intermittent or reciprocating motion to the stuff, whereby the clogging of cutters is prevented, and smooth work secured, in the manner set forth.

"I also claim the passage and the scraper, arranged and operating as described, in the rear of the throat of the plane, for freeing the plane from stray shavings, and for preventing the clogging of the cutters, in the manner set forth.

"I also claim the gauging pressure spurs, placed in front of the plane cutters, for retaining the board in its due position in contact with the bed of the plane frame, as set forth."

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65. For a *Machine for Carving Wood or Metal;* Isaac M. Singer, Pittsburg, Pennsylvania, April 10.

Claim.—"What I claim as my invention, is combining with a rotating cutter, which has only an endwise motion for determining the depth of cut, as described, a compound sliding table, (which carries the material to be carved,) operated by a system of pentograph levers provided with a pointer or tracer, that all the motions given to the tracer may be communicated to the material to be carved, in the manner and for the purpose specified."

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66. For a *Machine for Making Suspender Buckles;* Wm. Scarlett, Newark, Essex county, New Jersey, April 10.

Claim.—"What I claim as my invention, is the combination of the toggle for holding the wire, and forming the recessed figure upon it, as described; the combination of the cross-head, arms, and levers, operating together, as described. I also claim the combination of the levers and pointers, arranged within the die, and acted on by the levers, for punching the holes in the ends of the bow. I also claim the safety-bar, operated by the cam against the toggles, for the purpose of keeping the toggles in their straightened position until the punching machine is withdrawn, and thereby permit the discharge of the finished bow, as described."

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67. For an *Apparatus for Drilling Sub-Marine Rocks;* Thomas Kendall, City of New York, April 17.

Claim.—"What I claim as my invention, is the adjuster, with its cap, lens, adjusting screws, elastic circles, and circular pads. I also claim the combination of the chamber with the adjuster, tube, adjusting pins, and with the guide posts, constructed and arranged as described."

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68. For an *Improvement in Bedsteads for Invalids;* Isaiah Buckman, South Woodstock, Windsor county, Vermont, April 17.

The patentee says,—"The nature of my invention consists in constructing a bed for sick or disabled persons, in such a manner that patients may be elevated and suspended at any desired height, for the purpose of being aired, and to ventilate and adjust the bed, that they may be changed from a lying to a sitting posture, &c."

Claim.—"What I claim as new, is, 1st, the combination of the adjustable suspension frame with the fixed frame, the several parts being made and arranged in the manner and for the purpose described.

"2d, The combination of the sheets, and the rollers upon which they are wound, substantially as described.

"3d, The combination of the shower box and steaming apparatus with the contained compartment, as described."

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69. For an *Improvement in Spectacle Frames;* Joseph James Low, Philadelphia, Pennsylvania, April 17.

Claim.—"What I claim as my invention, is making the temples of spectacles either in whole or in part hollow or tubular, of either a cylindrical, square, or any other shape; said temples operating in the manner and for the purpose set forth."

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70. For an *Improvement in Looms for Weaving;* Aug. Faulkner, Walpole, Cheshire county, New Hampshire, April 17.

Claim.—"What I claim as my invention, is the method as described, of withdrawing the wires from the raised warp or figuring of the fabric, carrying them forward and replacing them again in the shed, by means of rolls receiving their different motions from machinery arranged as set forth, or in any other substantially equivalent manner.

"I also claim giving to the shuttle-box a vertical alternating motion, for the purpose of directing the shuttle through the shed, alternately above and below the ground warp, when the ground warp remains constantly stretched in the same plane, and the shed is formed simultaneously with the elevation and depression of the shuttle-box, by the alternate deflexion of the covering warp above and below the ground warp, substantially as set forth."

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71. For an *Improvement in Distilling Apparatus;* George Riley, City of New York, April 17.

The patentee says,—"The nature of my invention consists in causing the wash beer, or other article to be distilled, to be subjected to the action of an ascending current of steam, passing up through a series of perforated plates of metal, soap stone, or other material, securely fixed in a steam-tight vessel, each plate being provided with a drop-plate and receiver below."

Claim.—"What I claim as my invention, is distilling and rectifying spirituous liquors and turpentine, by causing a current of steam to pass up through a series of perforated metal, slate, soap stone, or other plates, securely fixed in a steam-tight vessel, and provided with drop-pipes and receivers below, through or over which the wash or other article is descending; the apparatus therefor being constructed in the manner described.

"I also claim the use of slate or soap stone plates for this purpose, with or without the combination of the drop-pipes and receivers, made and used as described."

72. For an *Improved Method of Expanding Metallic Pistons;* James Touchstone and Jacob H. Clark, Philadelphia, Pennsylvania, April 17.

The patentees say,—"The nature of our improvement is the tightening of metallic pistons by a single movement of a wrench, or other equivalent moving machinery, so applied as to obviate the necessity of separating the parts of the piston by removing the follower, (as is done in the ordinary pistons hitherto used,) and at the same time insuring accuracy and promptitude of adjustment."

Claim.—"What we claim as our invention, is the setting out or tightening of metallic packings, by means of the series of cams, in combination with the sliding rods, and with the springs, when the whole are operated simultaneously by turning the single cam head or shank, in the manner set forth."

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73. For an *Improvement in Straw Cutters;* Israel J. Richardson, City of New York, April 2.

The patentee says,—"The nature of my invention consists in adapting the double motion of the gate to one revolution of the crank, by means of the interposition of the toggle joint, to the purpose of cutting straw."

Claim.—"What I claim as my invention, is the combination of the toggle joint with the crank shaft, for the purpose of operating the knife, and giving the double or accelerated motion as set forth."

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74. For an *Improvement in Corn Shellers;* Israel J. Richardson, City of New York, April 2.

Claim.—"What I claim as my invention, is, 1st, the projections or horns, with the angular notches between the horns and the front edge of the jaw, for removing the grains or rows of corn that pass between the angles of the jaws.

"2d, I claim, in combination with the jaws, the guides, constructed and operated as described, for stripping the grain from the cob, when moved forward by a piston or its mechanical equivalent."

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75. For *Improvements in Cog Gearing of Locomotives for Ascending Inclined Planes;* Wm. Hoyt, Dupont, Madison county, Indiana, April 17.

Claim.—"What I claim as my invention, is, 1st, the combination of the intermediate cog wheel with the pinion on the propelling axle, and stationary cogged rail, into which the intermediate cog wheel is made to match or gear when required for ascending inclined planes, said intermediate cog wheel being hung upon a movable shaft, and kept in gear with the rack by means of a weight or spring, whereby difficulties arising from the inequalities in the road, or others incident upon the use of a rack and pinion for ascending inclined planes, are avoided, as set forth.

"2d, I also claim the mode of locking, by the employment of the cog wheels S and T, in combination with the pinion and intermediate cog wheel and rack rail, as described."

76. For an *Improvement in Endless Bands for Grain Dryers;* John Massey, City of New York, April 17.

The patentee says,—"The nature of my invention consists in providing an endless belt or apron, made of sheets or plates of metal, to be revolved or pass over grooved hexagon metal rollers, for the purpose of carrying grain and such like substances through a hot chamber or kiln, so as to dry said substances, when another kind of endless apron, not made of metal, could not be used."

Claim.—"I claim the combination of an endless apron, made of various pieces of plate metal, constructed with joints, united by axles which project below the inner surface of the web or apron, with octagon or hexagon rollers, constructed with grooves in the said rollers, to receive the projection or axis of the endless apron, (meshing into one another,) the whole constructed and operated in the manner set forth."

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77. For a *Vibrating Sash Stopper;* William Ferrell, Mount Holly, Burlington county, New Jersey, April 17.

The patentee says,—"The nature of my invention consists in providing an indented or rack side to one side of the window sash, and providing an eccentric button catch in a recess in the window case, the which button is moved by a key which has a thin slide or head, guided in an escutcheon on the window moulding, that makes the said key thrust out the catch button, to hold down the window, by catching into the rack on the sash."

Claim.—"I claim the combination of the key with the escutcheon and the catch button, operating as described, to make the catch button project into the rack side of the sash, to hold or retain the window, as described."

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78. For a *Piston Valve Cut-Off;* Gordon McKay, Pittsfield, Berkshire county, Massachusetts, April 17.

Claim.—"What I claim as my invention, is the cut-off, composed of two cylindrical portions or rings, working steam-tight with the sides of the steam chest, and also fitting steam-tight when brought alternately in contact with the flat surfaces of two pistons, between which said cut-off works, whereby steam is prevented from passing into the working cylinder of the steam engine, while either the cut-off alone, or the cut-off and piston together, are passing by the steam passage, said cut-offs being moved by the pistons, and attached to each other in the manner described."

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79. For *Improvements in Machinery for Cutting Veneers, &c.;* E. B. Cherevoy, City of New York, April 17.

Claim,—"What I claim as my invention, is the method of cutting veneers, as described, by means of a knife, or knives, having a longitudinal sliding or vibrating motion during the operation of cutting, when this is combined with a box or boxes on a rotating shaft, that, by its revolutions, it may carry the block to and over the knife, as described, whereby the operation of cutting veneers, by means of a sliding or vibrating knife to give the draw cut, may be made continuous, as described.

"And I also claim the method, as described, of communicating the feeding motion to the follower or followers, in the feeding box or boxes, by means of the arm or arms, so connected with the main shaft, or the equivalent therefor, that it may have a motion independent thereof, and connected with the follower or followers, in the feed box or boxes, and operating as described, or in any other manner the same in principle."

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80. For an *Improvement in the Manufacture of Paris Green;* Theodore Schwartz, City of New York, April 17.

Claim.—"What I claim as my invention, is, 1st, the process of dissolving the blue vitriol, by pouring on it, while the vitriol is in a dry state, the hot saturated solution, in water, of arsenic and carbonate of soda, as described in paragraph B.

"2d, The process of dissolving the dry carbonate of soda, by pouring on it the hot saturated solution, in water, of the arsenic and blue vitriol, as described in paragraph G.

"3d, The combination of the process described in paragraph B, or the process described in paragraph G, with all the several steps above described and marked with the letters A, C, D, E, and F. And also the combination of either of the said processes, described in section B and section G, with any of the above named steps described in sections A, C, D, E, and F."

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81. For an *Improvement in Electric Telegraphs;* Alexander Bain, London, England, April 17; (anté dated December 12, 1846.)

Claim.—"I claim as my invention, 1st, the composing of electro-telegraphic communications, by making groups of perforations through paper, corresponding with, or representing, the signs to be transmitted, irrespective of the general arrangement of the collective or individual signs, and irrespective of the mechanical means employed to make the perforations.

"2d, The application of paper, so perforated, to open and close an electric circuit, or several successive circuits, thereby transmitting the electric current or currents in successive pulsations, that correspond with the perforations in the paper, substantially in the manner described and shewn, but including any merely practical or convenient variations of the mechanical means or materials or fabrics employed, that are analogous or equivalent in their operation and effects.

"3d, The application of any suitable chemically prepared paper, without regard to the chemical ingredients used for such a purpose, to receive and record signs, forming communications, such signs being made by the pulsations of an electric current or currents transmitted from a distant station, said current operating directly, and without the intervention of any secondary current or mechanical contrivance, through a suitable metal marking style that is in continuous contact with the receiving paper, thereby making marks thereon, which marks correspond with the groups of perforations in the paper composing the transmitted communication, or may be given by the pulsations from the spring and block; so that, in either case, these form the received communication, in the manner described, and with

the effects shewn, including any merely practical variations analogous and equivalent in the means employed and the effects produced."

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82. For an *Improvement in Hooks and Eyes;* William Benjamin, Jr., City of New York, assignee of Henry McEvoy, Birmingham, England, April 17; (anté dated May 27, 1847.)

Claim.—"I claim the constructing of hooks with a projecting piece beyond the root of the tongue, for the purpose explained."

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83. For an *Improved Skate;* Alexander Barclay and Charles W. Boutgen, Newark, Essex county, New Jersey, April 17.

The patentees say,—"The nature of this invention consists in making the upper part of the skate of one or more pieces of iron, (instead of wood as heretofore,) of a skeleton form, raised at the heel, and provided with a spring to conform with the shape of the shank and sole and heel of the boot of the wearer, and attaching the same to the runner or lower part by dovetails, rivets, or other means, and further strengthening the attachment by projections on the lower surface of the upper part, and to dispense with the heel strap."

Claim.—"What we claim as our invention, is forming the upper iron part of the skate with segmental spaces at the forward and heel part, and an oblong opening near the centres and providing the same with a curved spring near the centre, for relieving the shank of the foot, and an inclined curved plate at the heel, and rings and rollers on either side, and securing the same to the runner by dovetailed or other formed projections on the upper edge of said runner, entering corresponding formed slots in the upper part, and further strengthening the attachment by projections on the lower surface of the upper part, on either side of the runner, through which, and the runner, bolts or rivets are inserted, in such a manner as to render the skate strong and durable, and to dispense with the usual heel strap, as set forth."

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84. For an *Improvement in Machinery for Cleaning Hair;* John Radebaugh and John A. Matlock, Lancaster, Fairfield county, Ohio, April 17.

The patentees say,—"The nature of our invention, consists in combining a heating chamber, for preliminarily beating and opening the hair, by a series of rotating, elastic, vibrating rods, with another larger chamber, in which the operation is completed by the reacting vibration of a series of rotating tension cords."

Claim.—"What we claim as our invention, is the combination of a chamber, in which are placed a series of elastic arms, that are simultaneously made to vibrate as the disk from which they project is revolved, with another chamber, in which are placed a series of tension cords, that are made simultaneously to vibrate as the disks to which they are made fast are rotated; the arrangement of the two chambers, and the manner of operating upon the hair, being as described."

85. For an *Improved Machine for Making Carpenters' Squares;* Jeremiah Essex, Bennington, Bennington county, Vermont, April 17.

Claim.—"What I claim as my invention, is graduating squares and rules by means of an arrangement of chisels, which are movable either between or through bars, and are pressed upon the square by any known mechanical device or power, in the manner described.

"Also I claim what is termed stamping squares, or putting on the figures by means of dies arranged as the chisels are, and acting in the same manner."

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86. For an *Improvement in Apparatus for Making Soda Water;* Solomon Andrews and Job F. Halsey, Perth Amboy, Middlesex county, New Jersey, April 17.

Claim.—"What we claim as our invention, is the employment of a perforated ball or fountain in the manner set forth, for the purpose of making an effervescent beverage, or a drink saturated with carbonic acid gas, called soda water."

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87. For a *Railway Propeller;* Robert G. and Oliver P. Hatfield, City of New York, April 17.

The patentees say,—"The nature of our invention consists in hinging a certain number of legs to a wheel, which legs are carried around by the wheel, and governed by pins working in eccentric grooves, in such a manner as to cause the legs to strike the rail always in the rear of the axle, however steep the grade, and, by a pressure against the rail analogous to the action of a horse's leg, to force the carriage forward."

Claim.—"What we claim as our invention, is the combination of the revolving disk with the legs and straightening rods attached to it, and the eccentric slots which are constructed in fixed pieces of metal, and act upon the rods; the whole constructed and arranged as described, and constituting a propeller to be attached to a locomotive."

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88. For an *Improvement in Machinery for Separating Flour from Bran, &c.;* Edwin and James M. Clark, Lancaster, Lancaster county, Pennsylvania, April 17.

Claim.—"What we claim as new, is the combination of a runner and concave, and their adjustment one to the other, in the manner and for the purpose made known."

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89. For an *Improvement in Cultivator Teeth;* Joseph S. Honey, Hartford, Trumbull county, Ohio, April 17.

Claim.—"What I claim as my invention, is the self-sharpening four-pointed plate for a cultivator, with its iron bed, each of the four to be used successively, but when two have been used, the plate is to be turned over, bottom side up: that is, the rear made front, in order to use the other two.'

90. For an *Improvement in Machinery for Taking and Laying Paper from the Cutting Engine;* J. M. & L. Hollingsworth, assignees of John M. Hollingsworth, Milton, Norfolk county, Massachusetts, April 17.

Claim.—"What we claim as our invention, is the movable platform, table, or sheet receptacle, in combination with the system of endless tapes, and their supporting rollers, and applied to the paper making engine machinery, by which the sheets of paper are separated from the web thereof, and delivered to said system of tapes or endless bands or rollers, or any other equivalents therefor, or as applied to any contrivance or machine from which sheets of paper are to be received, and evenly packed or filed, as described."

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91. For an *Improvement in Trusses;* John W. Wood, Mount Sterling, Montgomery county, Kentucky, April 17.

The patentee says,—"The nature of my improvement consists principally in the adaptation of my supporter spring with fissures in the elliptic plates and springs, for the peculiar adaptation of the pads or blocks."

Claim.—"What I claim as new, is an improvement upon the abdominal supporter, spring, and elliptical pad, patented by me in 1835, by attaching the pads to the spring or supporter, so as to be moved in any position required by means of adjusting screws, fissures, and slides, the pad having a perpendicular motion allowed by the fissure in the block riders, as set forth.

"I also claim, in combination with the side springs, the straps to regulate the pressure, as described.

"I also claim the abdominal supporter boundary above the hernial pads, forming an opening between it and the lower boundary, and which is intended to sustain the abdominal viscera, and prevent its encroachment upon the internal abdominal ring. I also claim the mode of closing the internal ring in inguinal hernia, as set forth, by leaving the upper portion of the abdominal canal and internal ring free, as specified."

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92. For an *Improvement in Planing Machines;* Job Sheldon and John S. Barden, New Haven, Connecticut, April 17.

Claim.—"What we claim as our invention, is the method of governing the set of cutters by the use of a cam in the central part of the cutter wheel, (whether above or below,) which will move the slides with diagonal grooves, so as to draw back the sets of cutters on one side of the cutter wheel, while those on the opposite side are cutting: that is, drawing back each set of cutters alternately, soon after it leaves the edge of the board or other article being planed, so as to avoid scratching the planed surface as it is coming out from under the cutter wheel, while the face of the cutter wheel is parallel to the face of the carriage. And the combination of the method of shifting the cam, so as to plane equally well when the carriage is running either way, with the method of elevating and depressing the cutter wheel, to conform to the thickness of the board or other material being planed."

93. For an *Improvement in Tan Vats;* Tarlton W. Brown, Howardsville, Albemarle county, Virginia, April 17.

Claim.—"What I claim as my invention, is the employment of the separate rising and falling bark chamber, for containing the bark, in combination with the main vat, containing the tan liquor, said movable bark chamber being made, arranged, and operated in the manner and for the purpose stated."

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94 For an *Improvement in Blast Generators;* Charles C. Lloyd, Philadelphia, Pennsylvania, April 17.

The patentee says,—"The nature of my improvement consists in providing drum-heads at the extremes of the machine, for the purpose of confining the water or other fluid within the same, thus superseding the necessity of a separate reservoir to contain the fluid; and in so arranging a valve or slip-joint at the end of the inner cylinder, which, while it prevents the compressed air from returning through the same, freely admits the water or other fluid to circulate from one extreme of the machine to the other."

Claim.—"What I claim as my invention, is the combination of the drum-heads, the valve or slip-joint, and the conduit pipe with the elbow, in the manner and for the purpose set forth."

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95. For an *Improvement in Piano Fortes;* Charles Hoist, New Orleans, Louisiana, April 17.

Claim.—"What I claim as my invention, is, 1st, the formation of the bottom of a piano of a metallic frame, combined with a wooden frame, or with blocks of wood, (as a substitute for the ordinary piano bottom composed of united boards,) for the purpose set forth.

"2d, I claim the formation of the body or sounding portion of a piano, independently of the outside casing, by the combination of the bottom with the requisite blocks and fillings, the sounding board, the rest plank, and the metallic frame, in the manner and for the purpose described."

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96. For an *Improvement in Mortising Machines;* Hezekiah S. Smith, Manchester, Hillsborough county, New Hampshire, April 17.

Claim.—"What I claim as my invention, is the above described combination of the two chisels and mechanism for operating them, so arranged, constructed, and operated, as not only to cut into the wood or stile in the manner necessary to form the mortise, but, by their combined action, to remove the chip or refuse wood therefrom, as specified."

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97. For an *Improvement in Driving Bobbins;* Arthur M. Eastman, Boston, Massachusetts, April 17.

Claim.—"What I claim as my improvment in the mode of operating bobbins, as invented by Francis M'Cully, Jr., and for which letters patent have been granted to him, and through him assigned to me, and by or through me in part to others, I still retaining a large proprietorship or in-

terest in the same, is the combination of the flanch, the dead spindle, and rotary pedestal, in manner and for the purpose as specified."

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98. For an *Improvement in Coffee Roasters;* Thomas R. Wood, Cincinnati, Ohio, April 17.

Claim.—"What I claim as my invention, is making the coffee toaster in a spherical form, provided with journals, in combination with a rim adapted to the form thereof, as described, whereby it can be adapted to the curved boiler holes of cooking stoves, ranges, furnaces, &c., and by which, also, it is adapted to the toasting of coffee more regularly than any other apparatus heretofore known.

"I also claim making the spherical toaster in two parts, substantially as described, in combination with the divided journals, as described, whereby the two parts can be separated and put together without the necessity of fastenings, as described."

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99. For an *Improvement in the Water Ram;* Alpheus D. Smith, Meredith, Delaware county, New York, April 17.

The patentee says,—"The nature of my invention consists in the removal, in a great degree, of the back action, or the resistance to the backward or down motion of the impetus valve, which, in water rams as heretofore constructed, has hindered the play of the impetus valve; also in materially lessening the quantity of the waste water in the working action of the ram."

Claim.—"What I claim as my invention, is the peculiar combination and arrangement of the parts by which the impetus valve is made to work in a cylinder placed for that purpose within a chamber surrounding it, said cylinder being provided with openings in its sides, which may be enlarged or decreased, above the impetus valve, for the escape of the waste water, until its impetus becomes sufficient to act upon and close the valves; the whole constructed in the manner and for the purpose set forth."

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100. For a *Curvilinear Blind Opener and Shutter;* Robert B. Rollf, Cincinnati, Ohio, April 17.

Claim.—"What I claim as my invention, is so connecting a window blind with a quadrant slide, made partly firm and unyielding, and curved to suit a quadrant casing, resting flush with the top of the window sill within the house, and partly of links jointed to suit, and attached to the blind, that, by means of a handle grooved to play in a slot in the quadrant casing, and screw-threaded where it passes through the slide, the blind can be thrown open and held at any angle, and forced back against the wall, the links of the slide being made to lie close to the blind, at the same time that they hold it firmly to the wall, by a slight retrograde movement of the handle, and screwing the handle and the slide fast to the casing, in the manner and for the purpose described."

101. For an *Improvement in Boxes for Railroad Cars;* Robert Levington, Monroe, Monroe county, Michigan, April 17.

The patentee says,—"The nature of my invention consists in the cup being so constructed as to keep the oil constantly around the journal, and at the same time show when the bearing box is worn out and needs replacing."

Claim.—"What I claim as my invention, is the combination of the tight oil cup with the axle, so constructed that said cup shall be constantly crowded up towards its cap as the composition bearing box is worn by the axle, thereby indicating the condition of said box by the space M becoming closed."

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102. For an *Improvement in Cooking Stoves;* B. T. Roney, Newtown, Bucks county, Pennsylvania, April 17.

The patentee says,—"The nature of my invention consists, first, in forming a compound flue, for carrying the heat from the top and concentrating it at the bottom, and preventing its outward radiation; and secondly, the continuation of the air chamber up in front, so that it can be brought into use through a lattice door, for the purpose of roasting, and so constructed as to have a drop door between it and the ash pan, by which means the ashes may be taken out in front, as described; and lastly, the formation of the top frame around the holes of the boiler, by casting a recess in it, which communicates with the external air, by which the plate is preserved against the action of the intense heat below."

Claim.—"What I claim as new, is, 1st, forming a compound flue, as set forth, by conveying the smoke flue around the bottom and sides of the oven, and an air flue so arranged as to convey off the surplus heat from the top of the oven to the bottom of the stove, by which the heat is concentrated there in any proportion desired. I also claim extending the air chamber up the front, where it can be used for roasting, as described. I also claim, in combination with the flue *z*, the drop damper or door in the fire chamber, to open a communication with the ash pan for the purpose designated."

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103. For an *Improvement in Mortising Machines;* John J. Weeks, Buckram, Queens county, New York, April 17.

The patentee says,—"The nature of my invention consists in cutting mortises in wood and other substances by means of an endless chain of cutters, (the cutters being formed in the outer edge of the chain,) which passes around two wheels or drums, one of them being of less thickness than the chain, and having its bearings in thin standards, so that the chain of cutters, or the cutting edges thereof, shall be of greater thickness than the said wheel or drum, together with its journals and standards, so that the said journals may cut a mortise, or slot, or groove, of greater depth than the depth of the chain and the semi-diameter of the wheel around which it passes."

Claim.—"What I claim as my invention, is the employment of an endless chain of cutters for cutting mortise grooves, &c., the cutters being formed

on the outer edges of the links, as described, in combination with the wheel around which the chain passes, and which is mounted on their standards, so that the wheel and standards shall be of less thickness or width than the whole width of the cutting edges, as described, whereby a mortise groove or gain may be cut, by a continuous rotary motion, of greater depth than is due to the depth of the chain, and the semi-diameter of the wheel around which the chain passes, as described."

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104. For an *Improvement in Machinery for Dressing Staves;* George Gilbert, New Haven, Connecticut, April 17.

Claim.—"What I claim as my invention, is so constructing the whole machine, that the rim or circle which carries the cutters for dressing the outer or convex side of the stave, may be firmly attached to, and sustained by, strong arms connected with a substantial wheel on the same arbor, axle, or shaft, as the other cutter wheel, so that the two cutter wheels may revolve in the same direction and in the same time; and so that the cylinder, within the arms that sustain this rim or circle, (having the back end closed,) may receive the staves as they fall, (after being fully dressed,) and prevent them from clogging the wheel; and in placing the other cutter wheel at such a distance from the open end of the cylinder as to allow convenient room to remove the staves at pleasure."

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105. For an *Improvement in Abdominal Supporters;* Herbert R. Hubbard and George W. Hubbard, Middletown, Connecticut, April 17.

Claim.—"We claim the combination of the two ratches and spring clicks, or dogs, with the main springs and front pad, so arranged as to enable the wearer to regulate the pressure of the whole pad or either end of it at pleasure."

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106. For a *Cut Nail from Muntz's Metal;* Samuel L. Crocker, Taunton, Bristol county, Massachusetts, April 17.

Claim.—"What I claim as my invention, is the new article of manufacture described, viz., a 'yellow metal' nail, made by cutting and heading it in a nail machine: meaning by the term yellow metal, a metal composed of copper and zinc, in the proportions in which they are usually combined in the manufacture of the well known 'Muntz's sheathing metal.'"

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107. For an *Improvement in Carriage Brakes;* Amos B. McFarlan, Downingtown, Chester county, Pennsylvania, April 17.

Claim.—"What I claim as my invention, is the mode of turning the crank axle to actuate the rubbers, by means of the combination and arrangement of the connecting rod and eccentric wheel with the axle of the car to which this brake is applied, as set forth, by which the engineer may cause the brake to act gradually or instantaneously, and most effectually, at a moment's warning, for retarding or stopping the motion of the car."

108. For an *Improvement in Musical Instruments;* A. & A. J. Prescott, assignees of Joseph W. Prescott, Concord, Merrimack county, New Hampshire, April 17.

Claim.—"What I claim consists in the modulating dissembling chamber which encloses the valves, in combination with the swell chamber and reeds, all as specified; the said modulating chamber serving to properly disseminate the sound before it is allowed to enter the swell chamber."

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109. For an *Improvement in Daguerreotype Apparatus for Panoramic Views;* Isaac Van Bunschoten, (as joint inventor with, and assignee of, John G. Woodbridge and Wm. Mann,) City of New York, April 17.

Claim.—"I claim as new, the application of the lengthened slides, either to act in opposite directions on one camera box, or on a plurality of camera boxes, for the purpose of taking Daguerreotype representations in successive parts or sections, and effecting the junction or matching of successive sections, by combining with the foregoing parts the adjustable lip, for the purpose of shutting off any stray reflections from the parts already operated on while the next successive part is operated on, or of shutting off the stray reflections, at the commencement, from that part of the Daguerreotype plate that is to be operated on after the first portion, in the manner and for the purposes described."

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110. For an *Improvement in Grates for Coal Stoves;* Caleb Isbister, Allegheny City, Pennsylvania, April 17.

Claim.—"What I claim as my invention, is the manner of lifting the grate to its place, by means of the plate attached to the under side of the grate, combined with the piece on the back of the drawer, as described."

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111. For an *Improved Piston Ring, and Method of Deriving Motion therefrom in Rotary Engines;* John Tremper, Little Britain, Orange county, New York, April 17.

The patentees say,—"The nature of my invention consists in providing a hollow cylindrical ring, in the interior of which I place a movable ring, with cogs on its under surface, to mesh into a pinion or cog wheel on a shaft, to drive the said shaft when the ring is in motion. The said movable ring moves steam-tight in the cylindrical ring, and, by peculiar combinations and arrangements, operates its (or the exhaust) valves, and the steam or induction valves, in a novel manner."

Claim.—"What I claim as new, is the movable ring, with the cogs or teeth on its under surface or sides, and with the incline or wedge pistons on its upper surface, and moving in the inside of the cavity or chamber of the circular ring, as described, and for the purpose set forth."

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112. For an *Improved Tool for Attaching Tubes to Boilers;* Thos. Prosser, City of New York, April 17.

Claim.—"What I claim as my invention, is the combination of the guide

ring, having mortises therein, with the segmental expanders, and conical or pyramidical mandril, constructed and operating as described.

"2d, I claim, as separate and component parts of the same, the double projections on the segments, having a hollow between them, to be placed opposite to the tube sheet while the tube is being expanded within it.

"3d, I claim the guide ring and the mortises in the same, together with the projections on the segments to fit into them. I do not, however, confine myself to any specific number of segments, form of projection on the segments to fit into the mortise guide ring, or position of the mortise guide ring itself, which may be placed inside the ring if required."

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113. For an *Improvement in Brick Presses;* Nathaniel Adams, Canterbury, Orange county, New York, April 17.

The patentee says,—"The nature of this invention consists in placing the brick, after being moulded in the ordinary or any convenient manner, on a horizontal plate, and forcing the same into a mould formed by plates firmly secured to the machine, and so arranged as to conform to the shape of the brick, and compressing the same in said mould by means of an eccentric roller and jointed plate, so combined as to form a cam motion somewhat similar to a toggle joint, with a sufficient force to smooth the surfaces of the brick, and render them suitable for the fronts of houses and other purposes where beauty of appearance is desired, and combining with this motion a reverse movement forming a duplex motion; the whole of the parts necessary to perform the operation being set in motion by a hand and foot lever, and arranged within a suitable frame provided with a pair of wheels at one end, to enable its being removed from place to place."

Claim.—"What I claim as my invention, is the mode of compressing the brick and withdrawing the same from the mould, by means of the concave space in the eccentric shaft, and oblong plate whose end is inserted in the same, forming a cam motion somewhat similar to a toggle joint, and tangential cogs or ears, connected together by a bolt or pin, and curved cogs, forming, with the movement mentioned, a duplex motion, in combination with the radial hand lever or bar and foot bar, by which the operator is enabled to exert the power of his hands and feet, as set forth; whether the parts above mentioned be combined with the pistons and other necessary parts, and constructed as those described, or any others substantially the same by which analogous results are produced."

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114. For an *Improvement in Galvanic Batteries;* Adolphus Olmstead, Easton, Northampton county, Pennsylvania, April 17.

Claim.—"What I claim as my invention, is constructing the battery with perforated rings or bars, through which are inserted tubular or solid pins or plates of zinc and copper, or other suitable metals, in the manner and for the purpose set forth, for producing voltaic electricity for medicinal and other purposes."

115. For an *Improvement in the Divisions between the Tubes of Flexible Boats;* Ebenezer T. Starr, City of New York, April 17.

Claim.—"What I claim as new, is making the interior divisions (which, to a certain extent, confine the webs or water-proof material forming the outer and inner surfaces of the boat) of some elastic substance, such as sheet india rubber, to allow of the expansion of the air contained in the compartments whenever the same shall occur from the exposure of the boat to a higher temperature than it was in at the time of its inflation."

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116. For an *Improvement in Shoulder Braces;* Henry F. Briggs, Poughkeepsie, Dutchess county, New York, April 17.

The patentee says,—"The nature of my invention consists in having a strap, wholly or in part elastic, to pass horizontally across the back, near the lower angle of each scapula, which terminates at either end under the arms, by being connected with the shoulder straps by means of an elastic band. 2d, By having another elastic strap attached on either side to the lower edge of said back strap, anterior to the scapula, the free extremities of each having a loop by which it is attached to, and supports, the clothing in front."

Claim.—"What I claim as my invention, is the back strap attached to the shoulder straps, so as to form a continuous band to the posterior loops to which the dress of the wearer is suspended behind, and the connexion thereto of the posterior piece of the lateral pieces, and of the anterior pieces which terminate at the loops, the specific action of the whole being that of a suspender, combining a spinal and a shoulder brace, complete in all its parts, as set forth."

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117. For an *Improvement in Planing Machines;* Enos G. Allen, Boston, Massachusetts, April 17.

Claim.—"What I claim as my invention, is, 1st, the combination of the non-elastic mouth piece with the upper feed rollers, it being attached to the frame in which they are mounted, and by which its position is so governed that it accommodates itself to the surface and thickness of the first shaving cut off the board, in the manner set forth.

"2d, I claim the combination of the series of stationary planes with the bed co nposed of alternate unyielding anti-friction rollers and flat cross-bars, the axis of the rollers being in the same vertical plane with the edges of the irons, so that their periphery may afford a constant support to one side of the board directly opposite to the point at which the iron is cutting the other, whereby the surface of the board, especially when it is thin, is rendered smoother, and its thickness more uniform, than if it were not thus firmly supported."

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118. For an *Improvement in Machinery for Separating Flour from Bran;* Joseph Johnston, Wilmington, Delaware, April 17.

Claim.—"What I claim as my invention, is, 1st, the employment of the angular reflecting bars formed on a portion of the concave surface of the

vibrating sifting cylinder, in combination with the radial wings on the surface of the upper portion of the close cylinder, when said cylinder is composed in part with the bristle or other brushes, said angular reflectors being thus arranged for the purpose of repeating the reflexion of the bran against the radial wings of the cylinder as often as the revolving cylinder throws it against the ribbed portion of the vibrating cylinder or concave, and thus detaching the flour from the bran before it comes in contact with the brushes to be driven through the wire cloth, as described.

"2d, I also claim the employment of the gravitating hammers or beaters, for the purpose of beating or detaching the flour from the meshes of the wire cloth, in combination with the pistons and cam wheel springs, and reticulated cylinder, whether arranged in the manner described, or in any other mode which is substantially the same; the vibrating or flexible cylinder being arranged on the springs, so as to yield to the stroke of the gravitating hammers, and thereby facilitating the discharge of the flour from the meshes of the wire cloth screen, as described."

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119. For an *Arrangement of Flues in Marine Boilers;* R. F. Loper, Philadelphia, Pennsylvania, April 17.

The patentee says,—"The object of my invention is so to construct a boiler as to cause the products of combustion from the furnace or furnaces to divide into two parts, and again commingle alternately through a series of labyrinth flues, against the sides of which they are caused to impinge many times in the course of their passage through the boiler."

Claim.—"What I claim as new, is constructing the boiler in the manner described, by the employment of a series of central and side water tables, forming a flue, in which the gases are alternately divided and commingled in the manner and for the purpose set forth."

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120. For an *Improvement in Water Rams;* Joshua L. Gatchel, Elkton, Cecil county, Maryland, April 17; (anté dated April 10, 1849.)

Claim.—"What I claim as my invention, is the conducting the water from the spring or fountain head to the ram, through a cluster of small tubes combined with the pipe that forms the body of the ram, in the manner and for the purpose set forth."

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121. For an *Improvement in Spectacle Glasses;* David Hotchkiss and Benj. R. Norton, Syracuse, Onondaga county, New York, April 17.

The patentees say,—"The nature of our invention consists in so constructing glasses for spectacles, that the upper portion is adapted to viewing objects at a distance, and the lower portion to viewing objects near the eye."

Claim.—"What we claim as our invention, is constructing glasses for spectacles in such a manner that the upper portion of each glass is adapted to seeing distant objects, and the lower portion to seeing objects near the eye, the two portions being in one piece, as set forth."

122. For an *Improvement in Cutters for Tongueing and Grooving;* John Levy, City of New York, assignee of Hazard Knowles, Washington City, D. C., April 17.

Claim.—"What I claim as my invention, is making revolving cutters in the form of segments of circular rings, of less diameter than the cutter heads, and arranging and securing them in circular groves, which, at the parts where the cutting edges project, are tangential, or nearly so, to the circles described by the edges of the cutters, in such manner that slight inaccuracies in adjustment will make no perceptible difference in the operation of the cutters, and whereby the great loss of time and expenditure of labor now usually employed in adjusting revolving cutters for similar purposes are avoided, as set forth."

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123. For an *Improvement in Machinery for Breaking and Dressing Hemp;* Allen Eldred, Oppenheim, Fulton county, New York, April 24.

The patentee says,—"The nature of my invention consists in the employment of the two sets of revolving beaters, which act on the opposite sides of the hemp or flax to beat out the broken wood, when combined with the fluted breaking rollers, arranged so that the hemp or flax lies on the periphery or peripheries of one or more of the said rollers, which thus answer the double purpose of breakers and moving rests for the hemp whilst being beaten."

Claim.—"What I claim as my invention, is the arrangement of the rotating beaters, in combination with the arrangement of the two breaking rollers which reverse the hemp or flax, that both sides may be acted on in succession, and which constitute moving rests to sustain and move the hemp or flax while acted upon by the rotating beaters, as described."

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124. For an *Improvement which consists in Producing a Substitute for Wool from Jute;* William O'Conner, Jersey City, Hudson county, New Jersey, administrator of Henri Menean de Villeneuve, Paris, France, April 24; (anté dated June 23, 1840.)

Claim.—"What is claimed, is the producing of a material which may be substituted for animal wool, by taking that species of hemp called jute, or Calcutta hemp, and reducing it unto fine fibres, capable of being spun into yarn or thread of various degrees of fineness, by stamping, combing, and otherwise treating it in the manner set forth. It is not sought to claim either of the individual processes herein described as of said De Villeneuve's invention, but it is sought to claim him to have produced, by their combined operation, from a material hitherto of little value, a fibrous substance of great utility, and not hitherto known in the arts."

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125. For an *Improvement in Tanning by Electricity;* Epidaurus Irving, City of New York, April 24.

Claim.—"What I claim as new, is the application of a circulation of the electric fluid, supplied from any competent source of electricity, to accellerate the process of liming and cleaning hides and skins; and also the

application of a like circulation of the electric fluid to accelerate the process of tanning hides of any description, with any proper tanning material or materials in solution, wholly irrespective of the description of hides or skins, and irrespective of the tanning substances employed, as described."

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126. For *Improvements in Machinery for Boring Bobbins;* Curtis E. Norris, Peacham, Caledonia county, Vermont, April 24.

Claim.—"What I claim as new, is, 1st, the combination and arrangement of the cam wheel, hinged vibratory boards, connecting arms, carriage and cord, weight, notched bar, trigger, and stop, for imparting to the spool to be bored a horizontal reciprocatory motion to and from the boring instrument, and for arresting the motion of the carriage at successive intervals, in the manner and for the purpose set forth."

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127. For an *Improvement in Fan Rocking Chairs;* Mary A. Woodward, Palmyra, Wayne county, New York, April 24.

Claim.—"What I claim as new, is combining with a rocking chair a curtain, suspended upon a frame affixed to the back of a rocking chair, and having a weight or weights attached to its lower edge, in the manner and for the purpose described."

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128. For a *Removable Fire Box for Locomotives;* John J. De Haven, Reading, Berks county, Pennsylvania, April 24.

Claim.—"What I claim as my invention, is attaching an independent fire box to the steam boiler, in such a manner as to render it easily removable, without displacing the boiler dome, machinery, or frame work, for the purpose of being repaired or replaced by another, whether the means of attachment be those herein described, or others capable of effecting the same object, and which have been used for analogous purposes.

"I do not claim making the dome to project from the end of the boiler, over the fire box, but when it does so project, I claim making it with a fixed and tight bottom sufficiently strong to resist the pressure of the steam, in order that it may be unnecessary to rivet it to the fire box, as has heretofore been the practice, and that one or more pipes, arranged so as to be easily detached, and of sufficient capacity to allow the free passage of the steam generated in the casing of the fire box, may be all the connexion that is necessary between the latter and the dome."

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129. For *Improved Forks for Holding Rope Belts upon Drum Wheels;* Charles Foster, Pompey, Onondaga county, New York, April 24.

Claim.—"What I claim as my invention, is the manner above described, of preventing the slipping of ropes upon wheels, viz., by attaching grippers or clamps to the periphery of the wheel, which are made to grasp and hold the rope by its own weight and the draught, the whole operating in the manner and for the purpose set forth."

130. For *Improvements in Cotton Gins;* Malcom McAulay, Thomasville, Thomas county, Georgia, April 24.

Claim.—"What I claim as my invention, is combination of series of ribs and lateral adjustable bearing supports with the ginning rollers, in the manner and for the purpose set forth."

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131. For an *Improvement in Cotton Scrapers;* William C. Finney, Fayette county, Tennessee, April 24.

Claim.—"What I claim as my invention, is the peculiar connexion and arrangement of the slide, landside, and mould-board No. 1, as described, securing the proper position of the scraper, regulating the position of the stock, and preventing the alteration of its set by the wear from from friction, to which the unprotected helve is subject."

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132. For an *Improvement in Saw Mills with Cylindrical Saws;* Gilbert Hatheway, Rochester, Plymouth county, Massachuseets, April 24.

The patentee says,—"The nature of my invention consists in the manner of constructing the cylinder or barrel of my saw, the mode of arranging and adjusting the carriage ways of my mill, and the guiding and fixing of a movable dog; and in the retaining of the form of a thin cylindrical saw while performing its work."

Claim.—"What I claim as my invention, is the forming of the carriage ways of a cylindrical saw mill, with arrangements for laterally inclining their position, with reference to the axis of the saw barrel, for the purpose of preventing the friction of timber against the outside of the barrel, as described.

"I also claim the movable dog, sliding on a support in the interior of a saw board, in a groove inclined in the axis thereof, and acting to keep the end of the piece of stuff which has been cut slightly bent as it advances, and out of contact, and consequently free from friction, against the interior surface of the barrel, whereby I am enabled to use a saw barrel of increasing thickness from the cutting towards the supporting end of said barrel, in the manner and for the purposes set forth.

"I also claim the combining of one or more inside, with four or more outside, cylindrical revolving guides, all capable of sliding longitudinally on their respective axes, so as to accommodate their positions to the gradual wearing away of the saw, and acting to prevent changes in its cylindrical form while undergoing rapid revolution."

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133. For an *Improvement in Shoe Lasts;* John Whistler, Carlisle, Cumberland county, Pennsylvania, April 24.

The patentee says,—"The nature of my invention consists in two screws turned by a key; a piece of Russia iron extends from the top of the centre of the last to the toe, which is split and extends under the toe, or zinc at the toe."

Claim —"What I claim as my invention, is the employment of the extra

screw No. 1, for expanding the uppers over the ball of the foot, in the manner and for the purpose described."

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134. For an *Improvement in Corn Shellers;* Israel Kepler, Milton, Northumberland county, Pennsylvania, April 24.

Claim.—"What I claim as my invention, is the combination of the adjustable toothed shelling plates with the fixed bars or segments, to form a toothed concave, within which a spiked, fluted, or roughened cylinder revolves for the purpose of shelling corn, the whole arranged and operated as set forth."

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135. For an *Improvement in the Machine for Polishing Stone;* George Fletcher, Sen., Greensburg, Decatur county, Indiana, April 24.

The patentee says,—"The nature of my invention consists in so constructing a revolving frame of radial arms, braces, and divisions, suited to the reception of guide boxes or carriages adapted to the rubbers for rubbing stone, that the boxes running on slides, and being charged with the rubber or other mass of stone, and the aforementioned frame being hung over a suitable bed, by revolving the frame, the guide boxes or carriages are not only made to travel in a circle, but to deviate, each one from the track of the preceding one, and from its own track consecutively."

Claim.—"What I claim as new, is the combination of a fixed bed and toothed wheel with a rotating frame, constructed and arranged as described, so that the pinions driving the rubber carriages radially therein shall cause them to pass over a different track, with regard to themselves and each other consecutively, the teeth on the fixed wheel not being a multiple of the teeth on any one of the pinions whether the pinions are of equal or unequal diameter, the one to the other."

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136. For a *Filtering Apparatus for Steamboat Boilers;* Paul K. Hubbs, Holmesburg, Philadelphia county, Pennsylvania, April 24.

The patentee says,—"The nature of my invention consists in providing for steam boilers on board of steam vessels, a filtering apparatus, so placed as to receive the double action of pressure from the river below and a suction of a pump above the filter plate."

Claim.—"What I claim as my invention, is placing a boiler filter near or upon the bottom of a vessel, with a pump elevating the water from its upper surface, when the reservoir beneath the filter is connected with the outside water by means of two inclined apertures, with stops or valves for closing them, constructed as described, whereby the greatest amount of pressure may be exerted upon the filtering diaphragm, and it may be washed by a current produced by the motion of the boat, as described."

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137. For an *Improvement in Obstetrical Supporters;* Abiathar Pollard, Ansable, and Simeon Minkler, Chazy, Clinton county, New York, April 24.

Claim.—"What we claim as our invention, is the combination and ar-

rangement, as described, of the pads, straps, and handles, which hold up the above described instrument, called an obstetrical supporter, whether the said instrument be constructed in the manner described or in any other mode substantially the same, by which analogous results shall be produced, as set forth."

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138. For an *Improvement in Bedsteads;* Nathaniel Colver, Boston, Massachusetts, April 24.

Claim.—"What I claim as my invention, is the manner in which I construct the foundation or support of the mattrass or bed, for the purpose of making the bedstead portable, and easily set up or put together or taken apart, as circumstances may require: that is to say, I claim the combination of the two frames or halves of a box, each of said frames consisting of a side, two ends, and bottom or slats; the two sackings, each affixed to its frame at one side and two ends, and supported on springs or stuffing as occasion may require; the clamps and keys or wedges, for connecting the two frames, and the lacing holes, and lacing extending through the middle of the mattrass foundation; meaning in the above, to lay no claim to either of the elements of said combination when separated from the rest, but intending only to claim the whole as a combination, constituting a bedstead support for a mattrass or bed, and to which the parts are to be applied, substantially as specified."

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139. For an *Improvement in Machinery for Cutting Screws on Rails for Bedsteads;* William F. Converse and Jonathan Burdge, Cincinnati, Ohio, April 24.

Claim.—"What we claim as our invention, is the combination of the simultaneous adjuster and graduater with the headstocks, the semicircular female governors, and V or other formed bits or cutters, as described, through the medium of which a perfect simultaneous movement of the bits is produced in adjusting their relative distances, as regards the shoulders of the rail, and in cutting the screws, and also a simultaneous and equal adjustment of the headstocks."

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140. For an *Improvement in Machinery for Spinning Hemp, &c.;* William C. Hibbard, Boston, Massachusetts, April 24.

Claim.—"What I claim as my invention, is the permanent clearer and presser, in combination with the gill, operating in the manner described."

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141. For an *Improvement in Churns;* Samuel Huff, New Vienna, Clinton county, Ohio, April 24.

The patentee says,—"My invention consists in arranging a strainer in any kind of churn suitable for the purpose, in such a manner that the dasher will elevate the cream upon it, which will, of course, run through it, and down again in a series of small streams or jets, which exposes it, during its descent through the atmosphere, in the most favorable condition for that agent to act upon it; the butter, as soon as formed, being retained by

the strainer, to be removed when accumulated in sufficient quantity to render that operation necessary."

Claim.—"What I claim as my invention, is the method of exposing the cream thoroughly to the action of the atmosphere, and separating the butter therefrom at the same time as soon as formed, by means of the air tubes and strainer, in combination with the dasher, arranged as set forth."

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142. For an *Improvement in Frames for Mosquito Bars;* L'Aimable Prosper Jacques, Cincinnati, Ohio, April 24.

Claim.—"What I claim as new, is the arrangement of rods and springs, after the manner or principle substantially as represented, by which a tester frame or mosquito bar may be either erected or folded out of the way at pleasure."

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143. For *Improvements in Cutting Out Cylinders for Bobbins, &c.;* Lewis Brown, Epsom, Merrimack, county, New Hampshire, April 24.

Claim.—"What I claim is the combination of one or more passages with the inner part of the cylinder, and discharging space or spaces between the ribs, in order to admit of the discharge of the chips or borings of the centre bit, as specified."

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144. For an *Improvement in Planing Machines;* Charles H. Peck and Coleman Hicks, St. Louis, Missouri, April 24.

Claim.—"What we claim as our invention, is the feeding the boards or plank into the machine, and retaining them in a stationary position whilst they are operated upon by the series of planing, tongueing, and grooving cutters in the reciprocating frame, by means of the pressure rollers, which are so combined with the reciprocating frame, and with suitable retaining clicks and ratchet wheels, that the rollers will be rotated during the backward movement of the reciprocating frame, and retained in a stationary position during the forward movement of the same, as set forth."

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145. For an *Improvement in Portable Beer Fountains;* David Gay, Bath, Lincoln county, Maine, April 24.

The patentee says,—"The nature of my invention consists in putting up beer and other fermented and gaseous liquors into portable fountains, for supplying venders of such liquors, and being drawn from a stop cock, retains the gas which is generated by the fermentation, and is necessary to keep the liquor good."

Claim.—"What I claim as my invention, is a portable fountain, in form and arrangement as described: that is to say, the combining therewith a refrigerator, and a gas receiver, to prevent explosions, and retain and preserve beer and other fermented and gaseous liquors in the manner and for the purposes set forth."

146. For an *Improved Method of Fastening Railroad Switches;* Francis G. Woodward, Worcester, Massachusetts, April 24.

Claim.—"What I claim as my invention, is fastening a railroad switch lever into its place by means of arcs, with slots or notches in them, attached to the lower part of the stand, into which slots a bolt drops, which bolt passes through an elongated hole in the lower part of the lever. I also claim locking the said bolt fast to the main lever, in the manner and for the purpose described."

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147. For an *Improvement in Boiling Sugar;* Knight Reed, New Haven, Connecticut, April 24.

Claim.—"What I claim as my invention, is the combination of the boiling pans, of this construction, with the pipes or tubes passing through the whole length of the series of boiling pans, and with the several dampers, to direct, vary, and change the direction of the heat, and with the clarifying pans, so set as to be heated by the same fire which heats the boiling pans, and yet so that the heat may be entirely shut from the clarifying pans, or either of them, at pleasure."

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148. For an *Improved Variable Power Capstan;* Edwin Allyn, assignee of Joseph E. Andrews, Boston, Massachusetts, April 24.

Claim.—"What I claim as my invention, is a capstan constructed as herein specified, so as to be susceptible of producing a quick and direct action to overcome a slight resistance, and a slow and more powerful action to overcome a great resistance, by merely turning the drum head round in the opposite directions while the barrel of the capstan always moves in the same direction; and the same being accomplished without any shipping or unshipping of gears, and by a system of ratchets, pawls, and gear wheels, pinions, &c., all arranged so as to turn with the capstan for the direct and quick action, but, for the slow and more powerful action, to turn the capstan barrel in the same direction by reversing the motion of the drum head: said parts being combined and operating as set forth."

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149. For an *Improvement in Diving Bells;* J. R. Worster, Baltimore, Maryland, April 24.

Claim.—"What I claim as my invention, is, 1st, the stationary mode of descent by slides attached to the canopy, corresponding in length to the depth of the water, and which slides pass through long upright grooves attached to the scows, the slides and canopy attached being forced down together by the rack and pinion, or other mechanical equivalents, the whole constructed as described.

"2d, The mode of supplying and using the light, by a lamp secured to the sides of the canopy, having a chimney passing out from the top, and a tube and stop cock from the inside, to admit a current of air of sufficient volume to sustain the lamp with two glasses, one of which throws the light inside, and the other out, the oil being kept in sufficient quantity in a holder on the inside, suspended under a vacuum and regulated by a stop-cock.

"3d, For the novel mode of communication through a tube reaching to the top of the slides, and with the mouth and stop-cocks attached."

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150. For an *Improvement in Machinery for Sawing Wood;* David Bonner, assignee of Joseph M. Toy, Greenfield, Highland county, Ohio, April 24.

The patentee says,—"The nature of my invention, in the portable machine for sawing wood, consists in constructing a series of revolving toothed arms, and arranging them so that they will take the logs up from the platform, elevate them to a suitable height, and, in combination with a press beam, ratchet wheel, and pawls, hold them firmly until sawed in two or more pieces."

Claim.—"What I claim as new, is the combination of the turning arms with the press beam, ratchet wheel, reaching arm, and lever, for the purpose of raising, holding, and feeding the wood to be sawed, as set forth."

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151. For an *Improvement in Machines for Making Grindstones;* Cotton Foss, Painsville, Lake county, Ohio, April 24.

The patentee says,—"The nature of my invention consists in combining with a revolving hollow cylinder of metal for cutting grindstones, by abrasion, out of flags of stone, an apparatus for supplying sand and water for the operation, in quantities proportional to the velocity with which the machine moves, which, of course, will be in exact proportion to the demand."

Claim.—"What I claim as new, is the combination of the apparatus for regulating the supply of sand and water with the boring cylinders."

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152. For an *Improvement in Bellows;* William T. Barnes, Buffalo, New York, April 24.

Claim.—"What I claim, is a double acting vertical bellows, acting on the air by a centre movable board, forcing it alternately each way through valves, and receiving wind through it at the same time, as described, using any combination of movable boards, and arrangement of valves, which will produce the desired effect."

RE-ISSUE FOR APRIL, 1849.

1. For an *Improvement in Machinery for Making Felt Fabrics, &c.;* Hezekiah S. Miller, Cincinnati, Ohio; patented March 5, 1839; re-issued April 24.

The patentee says,—"The nature of my invention consists in converting animal or vegetable fibrous material into continuous webs, laps, or sheets, while using the one or the other, after they have been carded, picked, or blown, so as to wind into hat bodies and attain advantageously with fur the same end which has heretofore been effected in relation to wool, and to manufacture wadding from cotton, or other web from other fibrous vegetable material."

Claim.—"What I claim as my invention, is, 1st, the combination of the fan, oblong box or spout, and cylinder, for the purpose and in the manner described; and 2d, the combination of the two aprons, operating for the purposes and in the manner described; and also, these in combination with the combined fan, spout, and cylinder, as described."

DESIGNS FOR APRIL, 1849.

1. For a *Design for Carpets;* Peter Lawson, Lowell, Middlesex county, Massachusetts, April 3.

Claim.—"Having thus fully described my design for carpets and other similar fabrics, I desire to secure the same by letters patent, a full illustration being given in the drawing accompanying."

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2. For a *Design for Carpets;* Peter Lawson, Lowell, Middlesex county, Massachusetts, April 3.

Claim.—"Having thus fully described my design, and illustrated the same by the accompanying drawing, I claim and desire to secure the same by letters patent."

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3. For a *Design for Carpets;* Peter Lawson, Lowell, Middlesex county, Massachusetts, April 3.

Claim.—"What I desire to secure by letters patent is the above described design, for weaving into carpets and other similar fabrics, as fully set forth in the accompanying drawing."

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4. For a *Design for Furniture Ornaments;* Cornelius & Co., assignees of Isaac F. Baker, Philadelphia, Pennsylvania, April 10.

Claim.—"What we claim as our invention, is the above described design called Major Heyward, as fully set forth in the drawing hereto annexed, and the use thereof as a furniture ornament, in whatever manner the same may be applied."

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5. For a *Design for Furniture Ornaments;* Cornelius & Co., assignees of Isaac F. Baker, Philadelphia, Pennsylvania, April 10.

Claim.—"What we claim as our invention, is the above described design called Cora Munro, as fully set forth in the drawing hereto annexed, and thereof for ornamenting furniture, in whatever manner or in whatever combination the same may be applied for that purpose."

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6. For a *Design for Stoves;* George E. Waring, Stamford, Connecticut, April 10.

Claim.—"What I claim as my invention, is the new and useful design for cooking stoves, which I call the Republic, as appears from the foregoing specification and the drawings attached thereto."

7. For a *Design for Stoves;* Chas. J. Woolson, Cleveland, Ohio, April 10.

Claim.—"What I claim as new, is the configuration and arrangement of said ornaments as designated and represented."

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8. For a *Design for Stoves;* John and Alexander Morrison, assignees of Abram Haney, Troy, New York, April 17.

Claim.—"What I claim as my invention, is the combination and arrangement of ornamental figures and forms, represented in the annexed accompanying drawings, making an ornamental design for a coal stove."

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9. For a *Design for Stoves;* Samuel H. Ransom, Albany, New York, April 24.

Claim.—"What I claim as my invention, is the combination and arrangement of ornamental forms and figures, represented in the accompanying drawings, forming an ornamental design for a cooking stove."

MECHANICS, PHYSICS, AND CHEMISTRY.

For the Journal of the Franklin Institute.

On the Dimensions of Steam Engine Chimnies. By Mr. H. F. Fairbairn.

The inquiry which appears in the June number of the Journal of the Franklin Institute, on the subject of the dimensions of steam engine chimnies, is one of the greater importance to Philadelphia, as it is certain that both beauty and profit can be made to arise out of the chimnies of the manufacturing establishments which may be founded in the city in future times. Philadelphia may be much beautified by the graceful forms of its steam engine chimnies, and a great annual saving in the consumption of fuel may be also made, in a city where fuel is destined to be at all times dear. Pleasure and profit may, therefore, be found in the construction of chimnies upon true mathematical rule.

Speaking comprehensively, the same rules may be given for the building of chimnies as for the proportions of columns; that one-half of the diameter should be diminished between the base and the capital; that the length of the shaft should be eight times the diameter of the base; and that the chimney should be circular in every part.

The same laws of resistance govern material and invisible substances; the cannon ball, the smoke from the cannon, and the sound of the cannon, all travel in the same direction, and with a velocity proportioned to the resistance of the air or the land. And as the sound of the cannon, so the sound of the human voice, and the sight of the human eye, must be governed by the same force of resistance to its progress over surfaces; and as the most gradual diminution of the diameter from the perpendicular line produces the least singularity, and therefore the least resistance to the passage of the eye over the external surfaces of a column, so the same form and dimensions will allow of the least resistance to the passage of smoke

over the internal surfaces of chimnies, and that chimney is the best which will the most rapidly transmit the smoke to the external air.

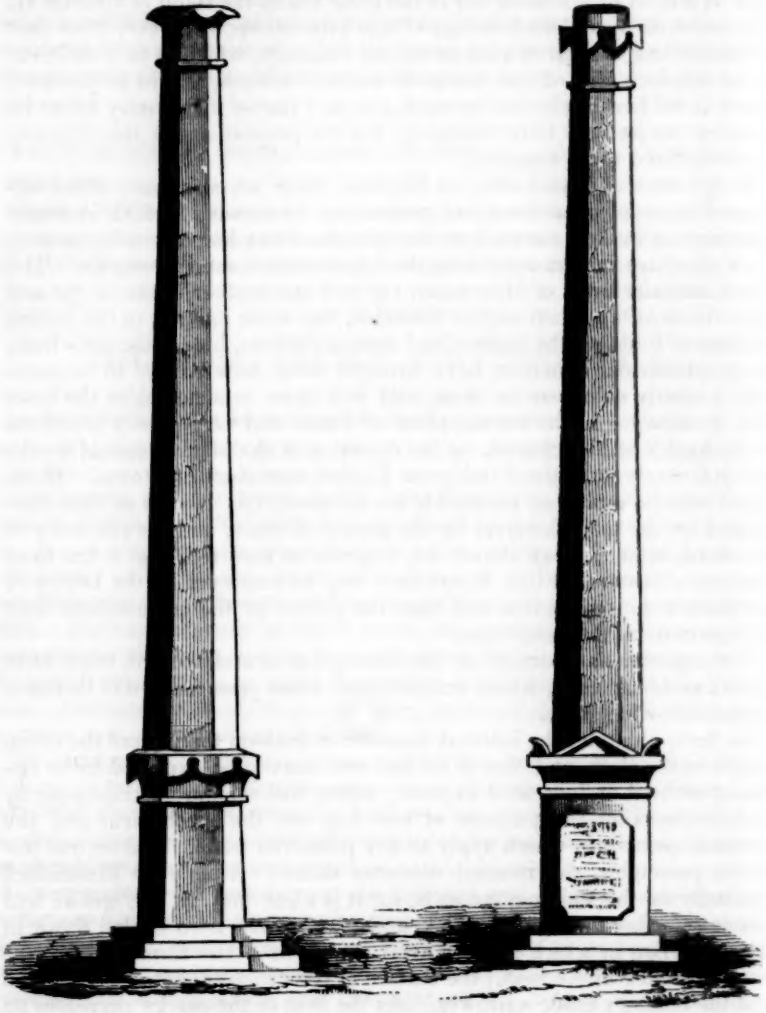
The finest steam engine chimney which yet has been erected in England is that of the West Middlesex Water Works Company, at Turnham Green, in the vicinity of London. This chimney is more beautiful as a column than the monument of London,—a pillar which was built by Sir Christopher Wren, in commemoration of the great fire in the reign of Charles II. It is crowned by a Corinthian cap of fine proportions with every other part of this noble specimen of a steam engine chimney, which is only deficient in the inferior color of the bricks of which it is built, and in its position, which is neither on elevated ground, nor in a part of the country where its beauties can be very fully displayed; but the proportions of this chimney are considered to be complete.

In the town of Manchester, in England, there are also many steam engine chimnies of great beauty of proportion, by means of which immense quantities of bituminous coals are burnt without any loss of heating power, these chimnies seldom exhibiting the appearance of sensible smoke. The cotton manufacturers of Manchester vie with one another in the height and proportions of the steam engine chimnies, and some failures, in the foolish extreme of building the highest and most ambitious, but, at the same time, too perpendicular chimnies, have brought those now erected to be generally perfectly columnar in form, and not more ornamental to the town than economical in the consumption of coals, and very greatly beneficial to the health of Manchester, by the cessation of the black cloud of smoke which formerly vulgarized that great English manufacturing town. However large the outlay of money for the chimney, this is now seldom considered by the manufacturer, for the saving of coals, and the efficiency of the steam engine, repay almost any expense so incurred; and it has been long since discovered that Manchester may be improved by the beauty of the steam engine chimnies, and that the pocket of the manufacturer may be improved at the same time.

Two specimens of design in this description of architecture, taken from a work on Manchester, which was published some years since, will be found on the following page.

In these chimnies the internal diameter is uniform throughout the entire length of the shaft, and this is all that can usually be expected to be obtained without an increased expense, which will seldom be undergone by manufacturers for the purpose of carrying out the mechanical and the chemical principles which apply to any particular trade. But on true scientific principles, the internal diameter should certainly be diminished gradually as the chimney ascends, for it is clear that, as the smoke and gas pass further through the brick work, which has been cooled down in the proportion in which it is removed further from the furnace wall, (the original source of the heat,) the surface of resistance ought to be decreased and the chimney made narrower. As the heat of the smoke decreases its condensation increases, and its expansion and ascending power diminished in the ratio in which the heat is lost. A gradual compression of the internal diameter would be the perfect mode of constructing chimnies on all the chemical and mechanical rules which apply to the passage of heated air.

The chimnies here shown are externally of an octagonal form, this being thought, by the author of the work on Manchester, to be capable of a finer ornamental effect in the blending of light and shade. "The association of light and shade is more striking in the octagonal than in the circular form of chimnies. In the former, the three great degrees of light and shade are produced, namely, light, middle tint, and shadow. In the latter, the



extremes of light and shade, pass insensibly into each other, and produce but a feeble effect when compared to the finer and the clearer tints of the octagonal form." There is much good taste in these observations, and the effect of light and shade is still more worthy of attention in the production of the ornamental of Philadelphia than of Manchester, as the climate is

not so clear in England, and the effect of light and shadow very much less marked and imposing than in the United States. The sky in Pennsylvania is of the dark blue color of the parallel latitudes on the Mediterranean Sea, and as the effect of the minarets and other columnar structures of Venice and Constantinople is derived from finely graduated proportions, when seen against the finest of skies, and as there is no smoke perceptible from the chimnies of the greatest elevation in the manufacturing districts of England, (for the combustion is rendered perfect by the powerful draft of these chimnies,) so in Philadelphia there will be, still more than in England, a removal of all traces of black smoke where anthracite coal is in use, and consequently a removal of that which mars the purity of the architectural effect of a column seen against the usually clear blue sky.

An octagonal chimney is, therefore, recommended for its production of strong tints of light and shade, and for its variety as amongst other chimnies of the circular or the square form, and because it is not more expensive of construction than a chimney circular throughout.

Respecting the ornamental work of a chimney, its shewing the cap of the Corinthian or of any other order of columnar architecture, it is requisite that keeping be studied with reference to the general architectural character of the city in which the building stands. The city of Philadelphia is plain—was laid out by a man eminently mathematical in his mind; utility was in the view of the founder of the city of right angles, but then utility includes proportion, and in proportion all solid beauty finally resides. The Corinthian column may be thought to be not in true keeping with the general character of the architecture of Philadelphia, nor are there wanting those who think that all ornaments to columns have been the production of ages when taste has been on the decline; that neither the acanthus flower nor the horn of the ram are in their natural places when growing out of the tops of columns of stone, but that the Doric columns of the Parthenon remain the most impressive, although the plainest, of all the structures of the columnar kind. The chimnies given from the work on Manchester are of a description suitable to the general architecture of Philadelphia, plain but not absolutely without ornament, with pedestals and tablets of marble or other material, recording the history of the erection of the place, and becoming a *monumentum in perennio* to the manufacturer and citizen of Philadelphia, who shall have built the finest architectural column and saved the most anthracite coal at the same time.

There is some difficulty to be expected in the establishment of a perfectly scientific system of chimney building in the city of Philadelphia, as there are erroneous models already in existence, the errors being very grevious of those which are the highest, and the best shown with regard to their dimensions, internal and external, and which are the most inquired after by those who are erecting iron works and other manufactories in the interior of the State.

The chimney of Messrs. Powers & Weightman, manufacturing chemists, in Spring Garden, Philadelphia, is the highest in the United States. This chimney is square and its internal diameter increases towards the top; two errors which have been disseminated from this chimney extensively through the State, almost all the iron works which have been erected during the last ten years having chimnies of similar form and internal dimensions as

the Philadelphia chimney of the chemists, which appears to be the model chimney of the State. It is argued that the plan of this chimney was brought from Europe as the best of all chimnies; that it has answered the purpose well; the nuisances of the former chemical works have disappeared from the air of Philadelphia, and the eminent firm of manufacturing chemists are sufficiently satisfied with the effect which has been produced.

But against this, it is to be remembered that the chimney is 126 feet in height; that the vast expense here incurred was for a purpose, to accomplish which capital was not regarded so much as success, and that although air and smoke sufficient for a comparatively limited purpose can be passed through a tube of excessive length, this is no reason why the same currents of air should not be passed through better formed chimnies, of considerably less height, costing considerably less money, and looking very much more beautiful to the eye. The chimney of the Spring Garden chemists will "do very well," but that is no reason why other manufacturers ought not to go further into its merits before adopting, in other situations, a model which has no other merit than that it is the highest and most striking to the view of all the chimnies which yet have been erected in the United States.

It is also said that the same manufacturing firm have proved their case as in favor of the square chimney, by the erection of a circular chimney at their other works, at the Falls of Schuylkill, and that "no good has been obtained" by the erection of this latter chimney in a circular form. Here let it be observed that the chimney at the Falls of Schuylkill is circular undoubtedly, but it has been curtailed of its fair proportions, is deficient by full one-sixth part of the true columnar proportions, and it is not singular that no better effect should be produced in the draft of air through a stunted circle than through a square of redundant length. The chimney at the Falls of Schuylkill has no pretensions to the proportions of a model, and until a circular chimney, of the same height with a square chimney, shall be shown to have carried away a smaller volume of smoke, and therefore to have overthrown all the established principles of chemistry and mechanics, it is not sufficient that there can be a circular chimney, otherwise defective in its construction, which shall be no better than a square chimney, which has been built at double the expense.

The chimnies of steam engines scattered through Pennsylvania are almost all erroneous in formation, and particularly at the various iron furnaces of the State. There are chimnies built on the principle of the chimney of the chemical manufactory of Spring Garden, which, in consequence, waste an expense of thousands of dollars per annum for coal; one of these chimnies on the Schuylkill river, for a steam engine of 90 horse power, costing $7000 per year, at the rate of five tons of coal per day at $4 per ton; and yet the boilers of this engine are fitted with all the apparatus for conveying the hot air from the tunnel head of the furnace; nor would there be any coals whatever required were the chimney not built widening towards the top, and capable of carrying off only about one-third part of the proper column of air, which the furnace could easily supply.

The subject of the form of steam engine chimnies is one of leading importance to the iron manufacture of the State, and though iron furnaces are not situated in cities, and the ornamental is not the first of considerations,

yet is there very great loss of capital incurred by the erection of chimnies which, in the words of "H." are "square masses of brickwork of small elevation," &c.

To be a column, eight diameters of the base is the height of the shaft, and with a diminution of one-half of the diameter at the top, are, therefore, the leading proportions to be preserved in the view of the builder of a steam engine chimney; the external ornament of circle or octagon, of capital or none, and other such considerations, being of less importance, and depending upon circumstances for which there is no general rule."

For the Journal of the Franklin Institute.

The American Steam Navy.

In the October number of the Journal, I alluded to the steam vessels belonging to our Navy, and which at that time, including *all classes*, numbered seven. Since then, the "Edith" has been lost in the Pacific, so that we are now reduced to six, and five of that number are very indifferent vessels, leaving the "Mississippi" alone to sustain the credit of the country, and, so far as one vessel can, she will nobly do it.

There are now building four steamers, the "Powhattan," "Susquehanna," "Saranac," and "San Jacinto." The first at Norfolk, the second at Philadelphia, the third at Portsmouth, N. H., and the last at New York. The first two are 250 feet long, and 45 feet beam, and the last two are 196 feet long, and 37 feet beam. The first two have side wheels, and two inclined engines, each with cylinders 70 inches diameter, and 10 feet stroke; the third has side wheels and 2 inclined engines, with 60-inch cylinders, 9 feet stroke, and the fourth has a propeller and two inclined engines, working across the ship, with cylinders 60 inches in diameter, 4 feet 2 inches stroke.

When it is taken into consideration that, in war steamers, every foot of room possesses a double value from the large number of men that have to be accommodated, we may well inquire why it is that *all* of these vessels have engines that take up so much space in the ship, to the discomfort of every one on board. The space between bulkheads, on the "Susquehanna," is 89 feet of the widest part of the vessel. Without disturbing the arrangements of the boilers, engines of equal efficiency, and less weight and cost, could have been put in, and the whole space occupied reduced to 60 feet. In fact, no other form of marine engine at present known, could be *spread over as much space* as the inclined engine adopted in these vessels. To be sure, by adopting some other form, we could not have used several so called valuable *American Patents*, but what was lost by the inventors would have been doubly gained to the country.

The Board of Engineers, who determined the form of engines for these vessels, were of *one opinion*, that nothing but inclined engines should be used. Their *reasons* have never been made public, and while all the engineers of this country and Europe are in the dark as to the advantages of this form of engine, the Navy Department very unfairly keeps all the information to itself.

The use of the inclined engine has heretofore compelled the decking over of the lower part of the engine, to obtain room for stores, &c., and

in some cases, the firemen, who are *roasted* while on duty, have been almost *boiled* when in their rooms. The "Missouri" was burnt by having a store room over the engine.

The forms of engine most used in the English Navy at present, are vertical direct action and the oscillating, and they have been well proved as worthy of confidence. But the fact of their being well tested there appears to have been an objection to their use here. We must have *American engines;* our flags are entirely different, why should not our engines be so? And we have the satisfaction of knowing that our engines are independent and *original.*

In examining a list of the builders of machinery for the English Navy, the names of Maudsly, Napier, Seaward, Fawcett, Boulton & Watt, Rennie, Fairbairn, Penn, and other celebrated builders, appear, all of whom *design* the engines they build, the plans being first approved by the Government, and a superintending engineer being stationed at the works. By this means, the talents of all the builders in the country are made available, and the competition between them stimulates all to active exertion, and the cost of Government engines does not exceed that for private service; while here, the system that prevails is opposed to improvement, and while it enhances the cost of the engines at least one-third, is productive of no good to any one, not even to the contractors, who would much prefer a different system.

It is to be hoped that the present Secretary of the Navy, who is not committed to the errors of the past, will take a proper view of the matter, and if so, any steamers that may be built during his term will be done in one-half the time, and at two-thirds or three-fourths the present cost, while their machinery will take less room, and give more comfort to all on board.

X.

For the Journal of the Franklin Institute.

Description of a Hygrometer, for Regulating the Moisture of the Air in Closed Apartments. By John M. Batchelder.

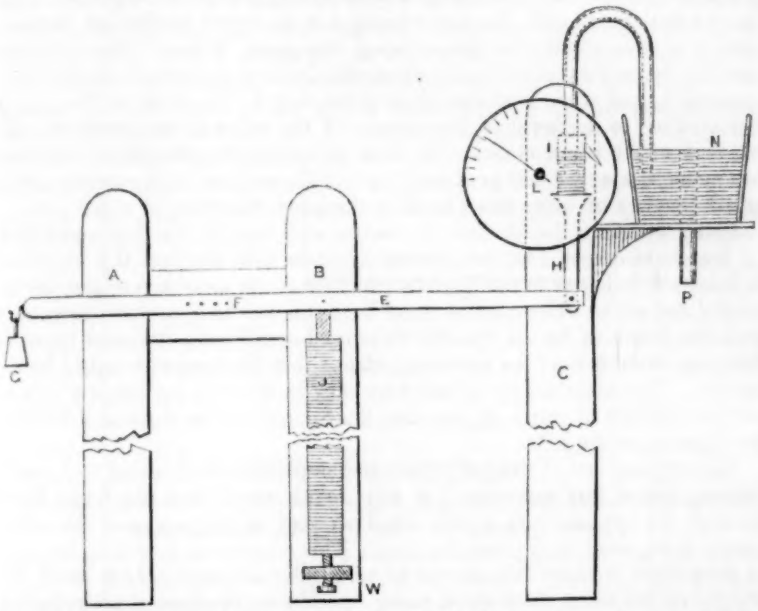
In a letter of Franklin, addressed to Edward Nairne, of London, a plan for a hygrometer is mentioned, which was afterwards made by Mr. Nairne, and is described in Vol. iv., page 449, of Sparks' edition of Franklin's Works.

In this instrument the motive power is derived from a slip of wood, one end of which is fixed, and the other end attached to the short arm of a bent lever, which is moved by the expansion and contraction of the wood, the extent of the motion being shown upon a graduated arc at the extremity of the lever.

Having found that an hygrometer resembling this, which I have used for several years past, is very readily affected by changes of moisture, I have made one upon a similar plan, and attached to it an apparatus which will produce any required degree of moisture in the apartment in which it is placed. An instrument of this kind will not indicate the dew-point with accuracy, neither can two instruments be made to give precisely the same expansion or contraction when exposed to the action of the same degree

of moisture; it is, therefore, of no value for observations that are to be recorded and compared with each other, but each instrument, when used in conservatories, or in any place where the temperature is nearly uniform, will, if the air becomes too dry, restore it to that degree of moisture that has been previously determined upon as the most desirable.

In the annexed figure, A, B, and C, represent standards of wood which support the apparatus; E is a lever having its fulcrum at F. Upon the top of the perpendicular rod H, which rests upon the horizontal lever, a light open-mouthed vial or cup, I, is placed, having an orifice and lip, S, at its side, near the top; this contains about one gill of water, its weight and the weight of the long arm of the lever being balanced by the counterpoise G. J is a slip of bass wood, (Tilia Americana,) four feet in length, two



inches in breadth, and one-eighth of an inch thick, the grain running in the direction of its breadth, or horizontally. This wood should be perfectly sound, of straight grain, but not of very close texture, its exterior being made rough by the use of coarse glass paper, in order to expose a larger surface to the air. At the bottom of the standard B, is a nut and adjusting screw, W, to which the slip of bass wood is attached; a plate of brass is screwed to the top of the wood, and is fastened by a pin to the lever E; from this lever a silk thread is carried around the pulley L, in a spiral groove; the axis of this pulley passes through a dial plate and carries an index. At N is a vessel of water, having a proper supply pipe leading to it, the water being retained at a uniform level by the waste-pipe P, and connected with the water in the small vessel by a syphon. The respective length of the legs of the syphon is immaterial, as the flow of the water depends upon the relative level of the surface of the water in the reservoir,

and that in the cup; both legs being immersed, the syphon remains constantly filled with water.

To put the instrument in operation, let the apartment be kept at its mean temperature, and at the degree of moisture required, both of the vessels and the syphon being filled with water. After the instrument has been exposed to this atmosphere a short time, turn the screw at W until the orifice in the vessel I is level with the top of the waste-pipe P; then turn the pulley L, and set the index at zero. The instrument being thus adjusted, if the air becomes more dry the slip of wood contracts, the small cup descends, and water flows into it from the stationary reservoir; the water then escapes from the orifice in the side of the cup, falls into a funnel, and thence into a pipe, which, when the instrument is used in green-houses, conveys the water to evaporating pans placed upon the flues, or to a horizontal pipe, having openings at its upper surface at suitable intervals, from which the water falls at any point desired. As the water thus discharged evaporates, the surrounding air is moistened, the wood is expanded, and when it attains its original length, the orifice in the cup is again raised to the level of the surface of the water in the reservoir, and the flow of the water ceases. If, from any cause, the air should become too moist, the only effect produced is, that the cup continues to rise, and a small quantity of water flows back to the large reservoir.

If, by accident, the air should become very dry, the further contraction of the wood causes a larger quantity of water to issue from the cup than is due to this change in the hygrometric state of the air, the discharge being *accelerated* as the difference of level between the two surfaces increases; thus the return of the air towards its normal condition is the most rapid at the time when it is of the most importance that the moisture should be restored. The same degree of moisture may be made to discharge a greater or less quantity of water, by moving the fulcrum of the horizontal lever to the right or to the left.

The opening and closing of valves and stop-cocks is attended with much friction, but in this instrument, it will be observed that the water flows through the syphon with a very small amount of friction, and that little power is required to depress the cup. This plan may, therefore, be used to advantage in many instruments in which the motive power is small, the weight of the water discharged being applied to produce more extended or more forcible movements.

Boston, November, 1849.

For the Journal of the Franklin Institute.

Particulars of the Steamship "Ohio."

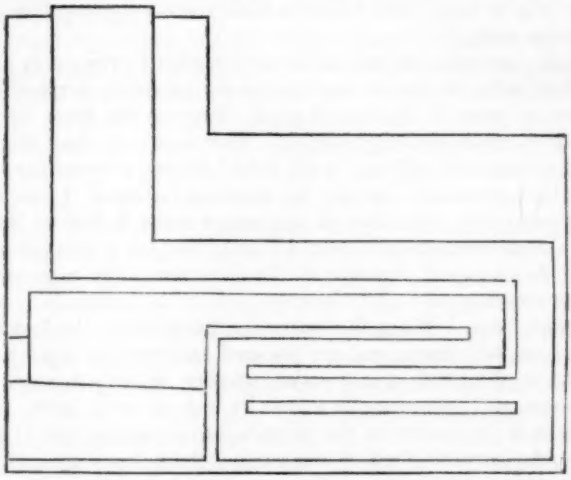
This fine mail steamer, recently finished for the line between New York and New Orleans, via Charleston and Havana, has just left on her third trip, and the following particulars concerning her may be of interest to the readers of the Journal:

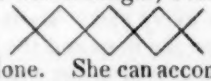
Length of keel, 240 feet; length on spar deck, 265 feet; depth of hold from spar deck, 33 feet; do. do. from main deck, 25 feet; breadth of beam, 46 feet; by government measurement, 2300 tons. She is fitted with two

side lever marine engines, having cylinders of 90 inches diameter. Length of stroke, 8 feet; diameter of water wheels, 36 feet; width of wheel, 10 feet.

The general arrangement of the engines does not vary materially from those of the "Canada" and "Europa," but some of the details are different. They have the long D slide valve, the "Ohio" has (double) balance valves, and while the steam valves are worked by one eccentric, so adjusted as to cut off the steam at any part of the stroke, the exhaust valves are worked by a separate eccentric, which may be set to give any desired lead. The valves being nearly balanced, may be worked with ease by hand.

The engines are a creditable piece of work, both as to design and finish, and appear to have proper strength for the duty they will have to perform. The boilers are four in number, two forward and two abaft the engines, each one being 15 feet wide, 21 feet 6 inches long, and 14 feet 2 inches high, having 4 furnaces, with grates 8 feet long. Using anthracite coal, with fan blast, 15 lbs. of steam can easily be maintained. The flues of these boilers are arranged somewhat different from any heretofore built, and are the only ones of the kind. After passing to the bottom, as is



usual in drop flue boilers, they rise and pass to the front again, where each pair of boilers unite in one chimney. By placing the boilers before and abaft the engines, the firemen are at all times in sight of the engineer, the weight is more evenly distributed, and any liability to strain the ship from that cause avoided. The "Ohio" has a diagonal framing of 3-inch round iron extending her whole length, between the centre kelson and main deck beam thus  which insures greater strength, and is not usually done. She can accommodate 500 passengers of various classes, and recently left New York with that number. She connects at Havana with the "Falcon," for Chagres, and a good portion of her passengers leave at that port.

The owners of the "Ohio" have another vessel, the "Georgia," of equal power but different model, nearly done, and as these vessels will be the

same in all other respects, a very good comparison can be made between them. On the completion of the "Georgia," I will announce the result.

The engines of the "Ohio" were built by T. F. Secor & Co., New York; the hull by Bishop & Simonson; the whole being under the supervision of Joseph N. Scott, Esq., Chief Engineer of the line. B.

For the Journal of the Franklin Institute.

On the Internal Form of Iron Furnaces. *By* HENRY FAIRBAIRN.

I propose a change in the internal form of furnaces, as now generally constructed in the anthracite iron manufacture.

The furnaces are usually cylinders, and when not perfectly cylindrical, the deviation from the perpendicular line from the boshes upwards, does not commence until about 10 feet from the tunnel head. Thus from the boshes for 14 or 15 feet upwards, there is no arch, and the wall of the furnace is a perpendicular line.

Here is the error which it is proposed to remedy, for an error of the first magnitude it is to build iron furnaces which are not correct in every part of the interior arch.

In a circle, pressure and resistance are equalized over every part, whilst in proportion to the deviation from the circle towards a perpendicular line, the pressure is towards the lowest point, because the force of gravity is increased in a corresponding degree. Therefore it is that the coals, the ore, and the limestone fall with a three fold degree of pressure against the walls of a furnace which has only the usual deviation of 1 foot in 14 from the boshes upwards, than though the curve were 4 feet or 4½, or one-third of the usual diameter of about 13 or 14 feet, or a true circle throughout. And this unequal pressure of the materials is the principal cause of the rapid destruction, and of the inferior yield of the anthracite iron furnaces of the present form. When the materials, particularly the large lumps of anthracite coal, roll down, and are pressed and wedged against the walls of the furnace, the blast cannot make entrance equally through masses of such materials, and consequently makes its way upwards at the next opening, which is at the centre of the furnace, as containing less of the resisting masses, the gravity of which has carried them down against the walls. The consequence of this is, that the materials are at all times pressed and packed so densely against the walls of the furnace, that one-third only of the blast penetrates that large part of all the materials contained in the furnace; that this may be estimated as so much additional cold wall filling up the furnace, and that the weight of the blast is driven up through the centre and lost at the tunnel head.

It is therefore proposed that an iron furnace shall be no longer a cylinder, but an arch, conical and curved in every part. By this form the internal walls will not be perpendicular from the flues and the boshes, but will be arched, and the diameter 3½ feet increased at the widest part—supposing the distance to be 14 feet, which is the usual form. The dimensions of a perfectly formed iron furnace would be one-third of the height for the extreme width, and one-eighth of the height for the narrowest part, at the tunnel head; and if the furnace be 42 feet in height, it would be 14 feet

at the boshes, and from this widest point, curving regularly to a width of $5\frac{1}{4}$ feet at the tunnel head. In a furnace of this form the materials would descend regularly and with an exact pressure upon every part; the blast would meet with no unequal resistance over any part of the materials; the combustion would be spread over all the lower parts of the masses of anthracite coal, which would not then be lodged and wedged against the walls, and that fuel would be employed in smelting iron, which now is lost and wasted in the form of flame at the tunnel head.

Full one-third more iron would be made in the same furnace which should be circular in every part than in one only cylindrical—110 tons per week being produced in the place of 80 tons.

The wear and tear of the furnace would be also diminished two-thirds, and an anthracite furnace would continue in blast three or four, or more, years, without repairs, for the blast would penetrate all parts of the furnace equally; the lower parts would not be mechanically damaged as now by the pressure of heavy masses of materials concentrated at the lowest point, nor would the upper parts and the flues be burned out in the same excessive degree by the internal stream of flame driven against them, and lost at the tunnel head.

To make one-third more iron, and the furnace to last two or three times longer without repairs, are therefore the advantages to be gained by the adoption of the arched form of the furnace, as here proposed.

There is a deficiency of information on this subject of the internal form of furnaces—the work of Professor Walter R. Johnson, on smelting iron with anthracite coal, being the only one in which the importance of the internal form of the furnace is preserved in view. Nor in that work is the best form of an iron furnace attempted to be given—the information being principally statistical—the dimensions, proportions, and successful or unsuccessful results in the production of iron being described of many of the furnaces existing up to about ten years since; but there is no definite deduction to be discovered in the work of Professor Johnson, nor any rule for the best internal form. A comparison, however, of the various descriptions and diagrams of Professor Johnson will certainly furnish evidence of the success of the furnaces which approached to the circular form; the Stanhope furnaces in New Jersey being a proof of the advantages of such an interior, and the Shamokin furnace of the contrary failure of a furnace of a pyramidally formed interior. Practice, therefore, so far as there has been any, is in favor of the arch, equally as are all the doctrines of pressure and resistance; and an iron furnace is one continued scene of pressure and resistance, both of solids and fluids, of the coals, iron ore and limestone, and of the air and the course and direction of the blast.

Translated for the Journal of the Franklin Institute.

Meteorological Phenomena. Formation of Clouds.

Captain Rozet, employed during the summer and autumn of 1848 in geodetic triangulations in the central portion of the Pyrenees, and, in consequence, often placed at great heights, had before him, to the north of

the chain which separates France from Spain, an immense perspective of the atmosphere which covers the French valleys stretching from the foot of the Pyrenees.

In calm weather, towards sunset, the atmospheric vapor formed a true sea of fog, the upper limit of which was very perceptible, well defined, and perfectly horizontal, that is, spherical, having a height above the sea of about 1300 metres. (4270 feet.) This foggy stratum, which was about 900 metres (2955 feet) thick, was, so to speak, the reservoir of moist air, which, by movements originating in the mass itself, and without external influence, gave rise to the different kinds of clouds which the observer saw forming, at the expense of this sea of vapor.

And in the first place, a portion of this foggy atmosphere rose, and losing its transparency became visible, but always passing into the state of *stratus*, that is, clouds in horizontal layers, and of but slight thickness. This first formation is evidently in accordance with the laws of movement of a warmer layer which rises from the bosom of an immense fluid mass. These original *stratus*, by an internal agitation easily conceived, afterwards transformed themselves into *cumulus*, that is, into clouds with a horizontal base, rounded and mammelated on their upper surface. These cumulus formed a stratum of from 400 to 500 metres (1300 to 1642 feet) in thickness, the highest part of which reached an elevation of 1800 metres. (5910 feet.)

These cumuli, disturbed in different ways, become *nimbus*, at heights which never exceed 3200 metres. (10,507 feet.) These nimbus, rainy and stormy clouds, have an elevation which is very variable. The internal constitution of this kind of clouds must be very complicated, and at certain points partial storms burst out, in which the rest of the cloud does not participate.

A remarkable peculiarity, and one which may throw light upon the theory of *heat lightning*, to which M. Arago has paid attention, is that, according to M. Rozet, "when these storm clouds touch the earth, electric discharges frequently take place without any noise, and thus form true *heat lightning* at a small distance from the observer."

Comptes Rendus de l'Academie des Sciences de Paris, March 5, 1849.

Translated for the Journal of the Franklin Institute.

Fusion and Volatilization of Refractory Bodies. Note of Some Experiments made with the Triple Combination of the Voltaic Pile, the Sun, and the Blowpipe. By M. DESPRETZ.

M. Despretz, in these experiments, used a battery equivalent to 185 pairs of Bunsen's combination of ordinary dimensions; the height of the zinc about 5¼ inches.

An annular lens of about 3 feet diameter.

An oxy-hydrogen blowpipe. The following were the results:

Hard and compact magnesia, which, under the action of the pile alone, assumed a pasty state, was immediately volatilized in white smoke by the combination of the pile and lens.

A needle-shaped piece of anthracite, of about ·04 in. in diameter and 1¼ in. in length, was bent by the action of the pile and lens. Another

piece, submitted to the simultaneous action of the pile, lens, and blow-pipe, appeared to fuse. Two persons present, besides the Professor, thought they saw the anthracite fall in drops.

In another similar experiment, he collected in a platinum capsule placed under the piece of anthracite, several small black globules visible to the naked eye. Ibid, June 18, 1849.

In some subsequent experiments, reported at the session of the 16th of July, operating with a Bunsen battery of 496 pairs, arranged in four parallel series, and about equivalent to 124 pairs of four times the size, and in the vacuum of the air pump, M. Despretz succeeded in volatilizing charcoal from sugar, "with much the same appearance as when a fragment of iodine is thrown upon a body sufficiently hot." The charcoal was deposited on the sides of the containing vessel, in a dry, black, crystalline powder. Every precaution was taken to avoid the presence of organic matter in the charcoal. Alumina was first melted, and then volatilized.

Translated for the Journal of the Franklin Institute.

On the Cooling of Masses of Air which Rise in the Atmosphere. Extract from a letter from CAPTAIN ROZET *to* M. BABINET, *dated June* 11, 1849.

You asked me to make experiments upon the cold produced by the dilatation of a current of air which rises along a regular slope under the action of a steady wind. It is not as easy as it might be thought, to find all circumstances favorable for such experiments; nevertheless, I have met them thus twice already in the chain of Corbieres, in the southern part of the department of the Aude, where I am now executing geodetic operations, and I hasten to give you the results.

1st June; clear weather; on Mount Bauchard; noon, wind from the south; steady and pretty strong; the two thermometers placed in the direction of the meridian.

Elevation of the lower station,	686 metres,	Lower Thermometer,	+23°C.
" " higher "	890 "	Higher "	+19°
Difference of levels,	204 "	Difference from below upwards,	— 4°

Horizontal distance of stations, 1000 metres. Mean slope, 12°.

4th June, on Mt. Mielavre de Bouisse, 2 o'clock, P. M.; weather clear; wind north-east and pretty steady, about as strong as the south wind of 1st June; the two thermometers placed in the direction of the wind.

Elevation of lower station,	641 metres,	Lower Thermometer,	+27°C.
" " upper "	865 "	Upper "	+24°
Difference of levels,	224 "	Difference from below upwards,	— 3°

Horizontal distance of stations, 700 metres. Mean slope, 18°.

Latitude of the places of observation, 43°.

On the 31st May, in clear weather, and with a strong south wind, I

found the thermometer rise 4·5° C. in less than half an hour, while descending the nearly perpendicular Rock of Bugarach, whose elevation is 1230 metres, and its measured height 180 metres.

I must also tell you that on the 3d June, the weather being calm and very clear, between 5 and 7 o'clock, A. M., I went from the village of Argues (Aude) up Mount Ournes, rising more than 500 metres above the village, without perceiving any lowering of the thermometer. On the contrary, when I arrived at my signal, it was ½° C. higher than at the village.

Ibid, June 25, 1849.

Translated for the Journal of the Franklin Institute.

Determination of the Velocity of Light by Experiment. By M. Fizeau.

I have succeeded in making the velocity of light sensible, by a method which appears to me to furnish a new mode of studying with precision this important phenomenon. This method is founded on the following principles. When a disk turns with rapidity in its own plane, around its centre of figure, we may determine the time employed by a point in its circumference in describing a very small angular space, such as, for instance, $\frac{1}{1000}$ of its circumference. When the velocity of rotation is great enough, this time is very small: for 10 and 100 turns per second, it is only $\frac{1}{10000}$ and $\frac{1}{100000}$ of a second. If the disk has its circumference divided, like a toothed wheel, into equal intervals, the alternate arcs of which are removed, we shall have, for the time of passage of each interval through the same point of space, the same very small fractions.

During intervals of time so short as these, light passes over quite small spaces; 31 kilometres (19·5 miles) for the first fraction, and 3 kilometres (2 miles) for the second.

In considering the effects produced when a ray of light traverses the divisions of such a disk while moving, we find this consequence: that if the ray, after its passage, is reflected by a mirror, and sent back towards the disk, so as to meet it again at the same point in space, the velocity of propagation of the light will intervene, so that the ray will traverse it or be intercepted, according to the velocity of the disk, and the distance at which the reflection takes place.

On the other hand, a system of two telescopes, directed the one towards the other, so that the image of the object glass of each of them will be formed in the focus of the other, possesses properties which permits us to realize the above conditions in a simple way. It is sufficient to place a mirror in the focus of one, and to modify the eye-piece of the second, by placing between the focus and the eye-glass a transparent glass inclined 45° to the axis, and receiving laterally the light of a lamp, or of the sun, which it reflects towards the focus. With this arrangement, the light which traverses the focus within the limits (supposed very small) of the image of the object-glass of the second telescope, is thrown towards that glass, is reflected at its focus, and returns, traversing the same space, to pass again through the focus of the first telescope, where it can be observed through the glass by means of the eye-piece.

This arrangement succeeds very well, even when the telescopes are

separated by a considerable distance. With telescopes of 6 centimetres (2·5 inches) aperture, this distance may be 8 kilometres (5 miles) without too much enfeebling the light. We then see a luminous point like a star, formed by the light which has passed from this point, traversed a space of 16 kilometres, (10 miles,) and then returned to pass again exactly through the same point before coming to the eye.

It is exactly through this point that the teeth of the turning disk must pass to produce the effects indicated. The experiment succeeds very well, and we observe that, according as the velocity of rotation is greater or less, the luminous point shines brightly or is totally eclipsed. Under the circumstances in which the experiment was made, the first eclipse was produced at about 12·6 turns per second; with a double velocity, the point shone again, with a treble velocity a second eclipse was produced, and when the velocity was quadrupled the point again shone, and so forth.

The first telescope was placed in the belvedere of a house situated at Suresnes, the second on the heights of Montmartre, at an approximate distance of 8633 metres. (5·37 miles.)

The disk, having 720 teeth, and mounted on a train of wheels moved by a weight, was made by M. Froment; a counter attached to it allowed us to measure the velocity of rotation. The light was taken from a lamp so arranged as to give a source of very bright light.

The first experiment gave a value for the velocity of light differing very little from that admitted by astronomers. The mean deduced from the 28 observations which I have hitherto been able to make is 70,948 leagues, of 25 to the degree, per second. Ibid, July 23, 1849.

Translated for the Journal of the Franklin Institute.

Shooting Stars. Extract of a Letter from M. Coulvier—Gravier *to* M. Arago.

Our observations upon shooting stars continue with the same exactitude since the month of November last. They are made at the Luxembourg palace, where the Government has provided an observatory for us.

As we have always remarked, the number of meteors was very small in the first half of the year; but from the beginning of July this number progressively increased, and the maximum took place about the tenth of August.

I subjoin the law of this increase, by reducing the observations to the hourly number at midnight.

1849 July	10,	6 shooting stars.	1849 July	26,	26 shooting stars.
	11,	8 "		27,	28 "
	13,	10 "		28,	33 "
	14,	7 "	Aug.	6,	50 "
	15,	10 "		8,	160 "
	20,	13 "		9,	107 "
	21,	13 "		10,	120 "
	22,	12 "		11,	80 "

Ibid, Aug. 13, 1849.

Translated for the Journal of the Franklin Institute.

Memoir on the Polarization of Light. By MM. F. De la Provostaye and P. Desains.

By operating on solar heat, and passing it through an achromatized spar, the authors have arrived at the following results:—

1. That the law by which, according to Malus, the intensity of a ray, completely polarized, divides itself between the ordinary and extraordinary images to which it gives rise in passing through a spar, is applicable to heat as well as to light.

2. That the variations which the intensity of polarized heat undergoes, in its reflection from glass under different incidences, are exactly represented by the formulæ which Fresnel has given for light, admitting that the solar heat which has passed through the prism has an index but little differing from 1·5.

3. That there is the most perfect resemblance between the phenomena which polarized light and heat present when reflected from polished metals.

Ibid, July 30, 1849.

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*Strength of Gutta Percha Tubing.**

A series of interesting experiments have just been concluded at the Birmingham Waterworks, relative to the strength of gutta percha tubing, with a view to its applicability for the conveyance of water. The experiments were made (under the direction of Henry Rofe, Esq., Engineer,) upon tubes three-quarters of an inch diameter, and one-eighth of gutta percha. These were attached to the iron main, and subjected for two months to a pressure of 200 *feet head of water*, without being in the slightest degree deteriorated. In order to ascertain, if possible, the maximum strength of the tubes, they were connected with the Water Company's hydraulic proving pump, the regular load of which is 250 lbs. on the square inch. At this point the tubes were unaffected, and the pump was worked up to 337 lbs.; but, to the astonishment of every one, the tubes still remained perfect. It was then proposed to work the pump up to 500 lbs., but it was found that the lever of the valve would bear no more weight. The utmost power of the hydraulic pump could not burst the tubes.

The gutta percha being somewhat elastic, allowed the tubes to become slightly expanded by the extraordinary pressure which was applied, but on its withdrawal they resumed their former size.

Wire Work Fire-Proof Ceilings.†

Fire-proof ceilings of wire work have been successfully applied, in place of lath, with plaster and stucco, as usual, at the Chester Lunatic Asylum.

* From the London Mechanics' Magazine, for July, 1849.

† From the London Builder, for July, 1849.

The wires are about ¼ in. apart, and the plaster forms an adhesive and serviceable mass, even on both sides. The wire is galvanized or japanned, to prevent corrosion. Not only ceilings, one would think, but thin partitions and walls in general, might be wired in place of lathed, and risk of fire thus greatly diminished by a process neither patented nor costly.

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*Self-Heating Shot for War Purposes.**

"We saw, the other day," says the Glasgow Chronicle, "in the establishment of Mr. Field, tin-plate worker, Argyll street, a peculiar and apparently most valuable mode of obtaining red-hot shot for large guns. It is the invention of Mr. Scouller, the foreman in Mr. Field's workshop, and consists in the filling the hollow shot with a highly combustible powder, the composition of which we are not yet at liberty to make public. Two or three fuse holes are made in the shot, so that, when fired from the piece, ignition takes place, and the shot is made red-hot before it arrives at its destination. In the trial we saw, the shot, which was about 2½ inches diameter, was simply laid on the ground, and the composition was ignited by a light applied to the fuse hole. Violent combustion immediately ensued; liquid fire appeared to stream from its three fuse holes, and the material became quite red-hot in a few seconds. The inventor states that, when fired from a gun, a red heat will be attained in less than 20 seconds from its leaving its mouth. The composition will burn under water. It is easily made, and there is little doubt as to its efficiency for war purposes, in place of the present expensive and troublesome system of heating, the shot being put into a gun in a cold state, as with ordinary solid balls."

FRANKLIN INSTITUTE.

Proceedings of the Stated Monthly Meeting, November 15th, 1849.

Thomas Fletcher, Vice President, in the chair.
Solomon W. Roberts, Corresponding Secretary.
Isaac B. Garrigues, Recording Secretary.
John F. Frazer, Treasurer.

The minutes of the last meeting were read and approved.

Letters, acknowledging donations, were read from the Royal Geographical Society of London, and the American Philosophical Society of Philadelphia.

Donations were received from—Joseph Fletcher, Esq., London; The Royal Cornwall Society, England; The Polytechnic Society of Bavaria; Samuel J. Fisher, Esq., Paris, France; Thomas Ewbank, Esq., Washington City, D. C.; B. H. Latrobe, Esq., Wm. Minifie, Esq., Baltimore, Md.; The Prison Discipline Society, Boston, Mass.; Hon. Joseph R. Ingersoll, James Swaim, Esq., The Controllers of the Public Schools, Mr. George S. Appleton, and Solomon W. Roberts, Esq., Philadelphia.

Donations to the Cabinet of Models were received from Mr. J. F. Mascher, Philadelphia.

* From the London Civil Engineer and Architect's Journal, for September, 1849.

The Treasurer's statement of receipts and payments for the months of September and October, was read.

The Board of Managers and the Standing Committees reported their minutes.

The Committee on Exhibition submitted their Report of the late Exhibition of American Manufactures, and recommended the award of Gold Medals to Joseph Dixon, Cornelius & Co., and Archer & Warner.

When, on motion,—

A Gold Medal was awarded to Joseph Dixon, of Jersey City, N. J., for his manufacture of Cast Steel.

A Gold Medal was awarded to Cornelius & Co., of Philadelphia, for the workmanship of their Gilded Chandeliers, and for the successful introduction of Electro-Gilding into the manufacture of Lamps, &c.

A Gold Medal was awarded to Messrs. Archer & Warner, of Philadelphia, for the great improvement exhibited in their workmanship, and especially for the beauty and grace of their original patterns.

Resignations of membership were read and accepted.

New candidates for membership in the Institute were proposed, and those proposed at the last meeting were elected members of the Institute.

Prof. Frazer offered the following preamble and resolution, viz —

Whereas, it is understood that a journal devoted to the publication of Astronomical Observations, and papers upon Practical Astronomy, is about to be issued at Cambridge, Mass., and

Whereas, the Franklin Institute of the State of Pennsylvania highly approves of all endeavors to encourage the cultivation of science in our country; therefore,

Resolved, That the Committee on the Library be instructed and empowered to subscribe for a copy of the Astronomical Journal, edited by B. A. Gould, Jr., Esq., of Cambridge, Mass.

Which was referred to the Board of Managers, with power to act.

On motion of Mr. W. P. Foulke, it was

Resolved, That the committee charged with the arrangement of Geological Specimens deposited by the City of Philadelphia, be requested to report in writing, at the next stated monthly meeting of the Institute—

1st, Whether or not that collection has been arranged for general use.

2d, If not, the reasons in detail which have delayed the arrangement.

M. Cardeza exhibited a breech-loading rifle, the invention of Mr. C. Sharp. In this gun, by depressing the lever, the breech is drawn down sufficiently to introduce a cartridge into the gun. On the side of the gun is a magazine of caps, through which the tube travels; the caps so present themselves, that when the lever is brought up, the cap is raised with it; when the gun is re-primed the old cap is thrown off. The cartridge, which is made a little longer than the chamber, is cut off by the breech, when elevated, thus exposing the powder to the action of the cap.

J. G. Morris, Esq., submitted several specimens of antique watches, made at Nuremberg in the 15th century.

The history of these was briefly alluded to by the Chairman. The lateness of the hour required the postponement of numerous subjects until the next meeting.

AMERICAN PATENTS.

List of American Patents which issued in the month of July, 1843, *with Exemplifications by* CHARLES M. KELLER, *late Chief Examiner of Patents, in the U. S. Patent Office.*

1. For *an Improvement in Water Wheels;* James Finley, assignee of J. Whitlow and James Stirrat, City of New York, July 3.

The patentee says,—"My improvement in these arms for which I claim letters patent, consists in my making them to diminish regularly in the capacity of their cross sections in such a manner as that the areas of such sections shall correspond with the velocity due to the water in its passage from the point at which it enters the arms to that at which its escapes therefrom; the same being calculated and graduated upon the principles herein made known. The advantages of this mode of construction is that no portion of the efficient water will be carried round by the centrifugal action of the arms, to an injurious extent; the whole being rendered efficient in the production of propelling power. It will be manifest, however, that although a near approximation may be made to the attainment of the proposed end, it is not possible in the nature of things to arrive at absolute precision in the mechanical construction of the hollow arms, and that some variation may also be admitted without sensibly changing the result. It will be seen, for example, that for some small distance from the centre of motion the velocity of revolution will be comparatively slow, and consequently the cross sectional areas may, for such limited distances be equal."

Claim.—"I do not intend, therefore, to limit my claim to such structures only as shall present the utmost attainable precision, but to embrace therein such hollow arms or apertures as are formed upon the principles herein made known, and the action of which, in consequence of such formation, is substantially the same in its results with that herein set forth. I do not claim any of the parts described which are old or known separately, nor otherwise than and in so far as the same are newly combined, modified, adjusted and arranged."

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2. For an *Improvement in the Machine for Cleaning Cotton before Ginning;* B. Seguine, City of New York, July 3.

The patentee says,—"The nature of my invention consists in constructing a machine that will clean all the dust and dirt from cotton after it is picked, before it is put into the gin, by which means less care is required in picking and a more perfect article is produced; the cotton being less liable to nap in passing through the gin."

Claim.—"What I claim as my invention, is making the casing for the conical beaters with the lower half enclosed with flat bars or slats, one of the edges of each of which project inward, so as to bring the cotton in contact with that edge; and in combination therewith the upper half made with round bars or grating for the escape of dirt, constructed substantially in the manner set forth."

3. For an *Improvement in Machinery for Dressing or Finishing Worsted, or other Threads or Cords*; Benjamin B. Tilt and James Skinner, Roxbury, Norfolk county, Massachusetts, July 8.

Claim.—"What we claim as our invention, is the combination of the rubber frame with the delivery and receiving bobbins; also the combination of the guide plates with the said rubber frame and bobbins, the whole being arranged together and operating as set forth."

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4. For an *Improvement in the Machine for Forming the Eyes of Wrought Iron Butt Hinges;* John F. Winslow, assignee of W. Whittaker, Albany, New York, July 8.

The patentee says,—"The nature of my invention consists in folding or bending the metal plate or blank butt previously cast and prepared of the proper dimensions, so as to form the eye or joint by a single operation of the machine.

Claim.—"What I claim as my invention, is the combination of the tumblers, cam, carriage and gauge, constructed, arranged and operated in the manner set forth."

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5. For an *Improvement in Metal Roofing for Houses;* J. G. Wooden, Cincinnati, Hamilton county, Ohio, July 8.

Claim.—"What I claim as new is the insertion in the laps of each seam of a cord of any suitable kind of yarn, a strip of cloth, or other appropriate fibrous material, and the confining the same in place by flattening down the seams, as set forth.

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6. For an *Improvement in Cane Cutters;* John P. Bryan, Princeton, Caldwell county, Kentucky, July 8.

Claim.—"What I claim as my invention is the form of the knives, their oblique application, and the method of arranging them in conjunction with the runners or carriage, as set forth."

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7. For an *Improvement in Wagons and other Carriages;* Horace Wood, Greenwich, Washington county, New York, July 8.

The patentee says,—"The nature of my invention consists—1st. In arranging the spokes in the wheels so as to prevent the rim from bending in at the joints by dividing the felloe into eleven parts, and putting the spokes about two parts from the ends; which makes a short space where the joints are, and long in the centre. 2d. In making the axletrees less liable to break or spring down by making them on the principle of an arch.

Claim.—"What I claim as my invention, is—1st. The arrangement of the spokes in the felloes near together at the joinings of the felloes in the manner described, to prevent the end from bending in at the joints. 2d. Inserting the iron tension rods through the arms of the axletree so that the nuts on the end shall act as abutments to the arch, and thus give greater

strength to the arched axletree, in the manner set forth. 3d. The employment of a ball and socket joint to connect the axletree with the carriage, to give free play in all directions to the axletree, as described; and 4th. The arch perches in combination with the tension rods, for the purpose and in the manner set forth, and applying the same to all kinds of wagons and carriages where the nature of the work will admit."

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8. For an *Improvement in Cutting Garments;* David N. Sipperly, City of Troy, Rensselaer county, New York, July 8.

Claim.—"What I claim as my invention, is the flexible protractor, and the application thereof for coat measurement and drafting."

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9. For an *Improvement in Tailors' Measure;* Cyrus Mory and David Hummer, McArthurstown, Athens county, Ohio, July 8.

Claim.—"What we claim as our invention, is the graduated scale of measure, whereby the measure of each subject is made the base of a scale which of itself answers for every part of the garment, more simple and easier to be understood, as one scale, with 12 sizes, will answer for cutting an entire suit; whereas, with the usual scales, not less than forty or fifty sizes, and at least three different scales are used for every possible difference in measure. We also claim as our invention, the plane protractor attached to the square, instead of the semi-circular, and the mode of projecting the divisions from the centre, by inches and tenths or hundredths, from the scale of equal parts, to produce the desired effect and a proper adjustment of every portion of the garment."

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10. For an *Improvement in Bedsteads;* John Morris, Derby, New Haven county, Connecticut, July 8.

The patentee says,—"The nature of my invention consists in placing springs under the sacking bottom of a bedstead in such a way as to form an elastic bed; the centre of the springs being fastened to a rail, that is attached to the head and foot rail at their centres, the ends of the said springs being fastened to the sides of the sacking, which is stretched over two rollers extending from the head to the foot posts, one on each side."

Claim.—"What I claim as my invention, is the combination of the springs, rollers, and sacking, in the manner and for the purpose set forth. I also claim in combination with the above, the centre strap for sustaining the sacking at that point, as set forth."

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11. For an *Improvement in Machinery for the Manufacture of Oat Rum;* Thadeus, Henry and Daniel Tibbals, Chatham, Middlesex county, Connecticut, July 8.

Claim.—"What we claim as our invention is the combination of the boiler having a partition in the middle, with openings at each end, with the paddles and furnace, as set forth, and for the purposes set forth."

12. For an *Improvement in Cooking Stoves;* Albert D. Hart, Pittsfield, Berkshire county, Massachusetts, July 8.

Claim.—"What I claim as my invention, is the arrangement of the flues in the rotary plate, and the combination of said plate with the stove, as set forth. I also claim the manner in which I have combined the rotary plate and stove with the elevated oven."

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13. For an *Improvement in Machines for Sawing Clap Boards;* D. Bartholomew, Wolcott, Danville county, Connecticut, July 8.

The patentee says,—The nature of my invention consists in the manner of feeding the saw, by means of a double reverse threaded screw, in setting the log, and in adjusting the saw to the size of the log, as described."

Claim.—"What I claim as my invention, is the method of raising the lever for setting the saw, by means of a lever constructed and arranged as set forth."

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14. For an *Improvement in Sizing Yarn by Steam;* H. A. Fletcher, Shelburn, Chittenden county, Vermont, July 8.

The patentee says,—"The nature of my invention consists in the application of the sizing material by means of steam."

Claim.—"What I claim as my invention, is the application of the sizing material to the yarn by means of steam, as set forth, and using for that purpose gum arabic, in connexion with glue."

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15. For an *Improvement in Brick Machines;* Lee Montgomery, Tunnel, Alleghany county, Maryland, July 8.

The patentee says,—"The nature of my invention consists in combining a wheel, the periphery of which is indented with a series of brick moulds, with an antagonist wheel having projections on it which shall force the clay into the moulds; said projections being sufficiently convex to make the face of the brick next it straight."

Claim.—"What I claim as my invention, is the moulds having flaring mouths, so as readily to admit the projections on the wheel to work into it and deliver the bricks freely, placed around the periphery of the wheel, constructed and arranged as set forth. I also claim the combination of the wheel, having projections on it with convex surfaces with the moulds constructed, arranged and combined in the manner and for the purpose set forth. Lastly, I claim in combination with the above the sliding board and roller, in the manner set forth."

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16. For an *Improvement in Iron Pavements for Streets;* William D. Berry, Boston, Massachusetts, July 12.

The patentee says,—The nature of my improvement consists in covering the surface of the street with boxes made of iron of any convenient form and size, divided into sections, (which sections are to be so small as not to admit the hoofs of a horse,) by compartments of iron, which are so arranged as to strengthen the whole, and together with the rim of the

boxes, are groved in such a manner as will most effectually prevent the feet of horses, or wheels of carriages, from slipping. The boxes are keyed or linked together, and the interstices or sections are to be filled with any composition which may be procurable in the section of country where the pavement may be used, and which may be found suitable to the purpose. Among the compositions which may be used, I name asphaltum, and a composition made of stone and shells, broken small and mixed with hydraulic, or other cement."

Claim.—"What I claim as my invention, is the manner of using iron in the pavement of streets, by means of boxes connected by flanches or keys and commissures, and divided into small sections, which leave openings or interstices, to be filled inside and between the rims with an composition which may be best adapted to the purpose. Using for that purpose boxes of any form, divided into sections in any manner which will produce the intended effect."

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17. For an *Improvement in Casting Boxes for Carriage Wheels;* James Mollineux, Northampton, Lehigh county, Pennsylvania, July 12.

Claim.—"What I claim as my invention is, 1st, the combination of the jaws and top and bottom plates, with the movable core, constructed and arranged as set forth. 2d. I claim in combination with the above, the gate opening into the side of the mould, with a long narrow mouth, reaching nearly from top to bottom of the casting, as set forth.

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18. For an *Improvement in the Mode of Constructing Andirons;* E. Smylie, City of New York, July 12.

Claim.—"What I claim as my invention, is the combination of the safety bars with the andirons, as the whole is set forth."

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19. For an *Improvement in Self-operating Brakes for Railroads;* Henry C Sides, Baltimore, Maryland, July 12.

The patentee says,—The nature of my invention consists in arranging brakes so that when the rod by which the car is drawn is checked back, the brake will act; the arrangement being such as to shift and act when the car is going in either direction; the method of pressing the brake against the wheels being so arranged as to admit of the most powerful action."

Claim.—"What I claim as my invention is, 1st, the manner of combining the draw rod with the brakes, for the purpose described, by means of the stud and notches in the slot of the piece. 2d. I claim the employment of a draw rod having a long slot in the centre, which embraces the spring, so as to allow it a longitudinal motion, independent of the spring, for the purpose set forth. 3d. I claim the shifting apparatus for causing the brakes to act when the cars run either way; that is to say, the piece and the lever, rod and shaft by which it is moved, combined and arranged, substantially in the manner set forth."

20. For an *Improvement in the Reaction Water Wheel;* Daniel H. Parsons, Chester, Meigs county, Ohio, July 12.

Claim.—"What I claim as my invention is, 1st, the manner of forming the buckets. 2d. The construction and application of the counter balance, as set forth; that is to say, by enclosing it within an outside case, so as to present a smooth outside surface to the action of the water when used in combination with reaction water wheels."

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21. For an *Improvement in Constructing an Apparatus for Manufacturing Salt;* Henry Smith, Salina, Onondaga county, New York, July 12.

The patentee says,—"In constructing my apparatus for the manufacture of salt from brine, or of other articles of a similar nature, I form the jambs of the arches in which the kettles are to be set, of large metallic cases or boilers, either of wrought or cast iron. When a single arch is used, two such metallic cases will be required, but where there are two arches, which will generally be the case, three such cases will be required. These cases take the places of the sides and intermediate walls of masonry generally employed. They are to be connected together by tubes which reach across from one to the other of them, and constitute the grate bars upon which the fuel is to be placed. These tubes are to be at such distances apart as to allow of the falling of live coals and brands between them, which are to burn on the bottom of the ash pit, by which the heat will be economised, as the lower part of the tubes and of the metallic cases will be thereby more effectually heated."

Claim.—"What I claim as my invention, is the manner in which I have arranged the metallic boilers or cases in the jambs of the arch, and the tubular grate bars by which they are connected, in combination with the evaporating kettles situated above and between the said boilers, for the purpose of manufacturing salt, as set forth."

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22. For an *Improvement in the Machine for Carding and Roping Wool, Cotton, and other Fibrous Matter;* John Boynton, South Coventry, Tolland county, Connecticut, July 12.

Claim.—"What I claim as my invention, is taking off the wool or roping from the doffers between two revolving cylinders to each doffer, the upper cylinder resting on the under one, for the purpose and in the manner set forth. I likewise claim the arrangement of the vibrating cylinder, each resting on two condensing cylinders in such manner as to obtain two bearing points on the roping instead of one for each vibrating cylinder, as set forth."

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23. For an *Improvement in the Construction of Scythe Sneeds and Hanging Scythes;* George Farquhar, Easton, Northampton county, Pennsylvania, July 12.

Claim.—"What I claim as my invention, is the combination of the additional arm and brace with the scythe sneed, the whole being constructed and operating as set forth."

24. For an *Improvement in the Construction and Heating of Furnaces;* Christian E. Detmold, City of New York, July 15.

The patentee says,—"My invention is intended as an improvement on the process of an apparatus for applying the gas from blast and other furnaces to the manufacture of bar iron, and to other purposes, invented by Van Faber du Faur, and for which letters patent of the United States were granted to me as the assignee, and consists in the arrangement and combination of an apparatus for the especial purpose of generating combustible gases from any kind of fuel; by the combination of which gases, the furnaces or other structures are to be heated, and of an hot air chamber, blow pipes, &c."

Claim.—"What I claim as my invention is, 1st, the combination of a chamber of combustion for the sole purpose of generating combustible gases with refining, puddling, heating, or other furnaces, with those of steam boilers, ovens, or any other apparatus for generating heat; said combination being made substantially in the manner set forth. 2d. I claim the particular arrangement and combination of the hot air chamber, the blow pipes, the arch of fire brick, and the range of fire brick or fire clay, over the gas generating chamber, by which the blow pipes are protected from the effects of the heat. I do not claim to have invented the use of combustible gases for the heating of furnaces, in combination with streams of heated and compressed air, nor the application of the blow pipe to furnaces, this being known as De Faber's invention; but I do claim the above described manner of arranging and combining the chamber for generating the combustible gases, the hot air chamber, blow pipes, and the fire proof arch for their protection when applied to any kind of furnace or other apparatus for generating heat."

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25. For an *Improvement in Bending Metal Sheets for Roofing, &c.;* John Iggett, Albany, New York, July 15.

The patentee says,—"The nature of my invention consists in machinery for bending sheets of metal for covering roofs at their edges, so as to allow for their expansion and contraction, and also for forming caps for the same. Each sheet of metal is bent up at the edge at right angles, and its upper part is again bent at right angles parallel with and over the flat part that lays upon the roof; two of these are laid side by side and the upper horizontal parts are embraced by a cap or strip of metal that lays over them, and the edges turn down under them."

Claim.—"What I claim as my invention, is the combination of the lower folding bar worked by screws, and the upper folding bar with jaws, formed by the brace, and horizontal bar, constructed and arranged as set forth. 2d. I claim the combination of the grooved bed piece, bar and levers, constructed and arranged as set forth."

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26. For an *Improvement in Cheese Presses;* Hartwell Kendall, Danby, Rutland county, Vermont, July 15.

Claim.—"What I claim as my invention, is the combination of the ratchet wheel, lever and crank, with the windlass or arbor of a lever press,

constructed and arranged substantially in the manner and for the purposes set forth."

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27. For an *Improvement in Clap-board Machines;* Daniel Newton, Dalton, Coos county, New Hampshire, July 20.

Claim.—"What I claim as my invention, is the hanging the shaft of the saw so that one end of it can be raised or lowered, in combination with the cam and sliding box, for the purpose set forth. And I claim the method of regulating the set of the log or plank, by means of the index wheel on the shaft of the wheels that move the carriage, in combination with the sliding steel pin and inclined surface, substantially as set forth."

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28. For an *Improvement in Obtaining Wire from Iron, Steel, Copper, Brass, Gold, Silver, &c.;* Thomas Wallace, Derby, New Haven county, Connecticut, July 20.

The patentee says,—"Instead of rolling the metal into rods or strips, as heretofore, I cause it to be made into cylinders or hoops by casting, welding or rolling, or a combination of them, as the various metals may require, and of such diameter, breadth, thickness, and quality, as may be convenient. I then, with circular shears, begin to cut from the edge of the cylinder or hoop of metal a strip or thread of metal of any desired width, and so cut in one continuous strip or thread until the whole cylinder or thread is cut out."

Claim.—"What I claim as my invention, is the cutting of a cylinder of metal, or hoop of metal, into a strip of metal, or thread of metal, for the purpose of making wire."

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29. For an *Improvement in Augers;* Raymond French, Derby, New Haven county, Connecticut, July 20.

The patentee says,—"The improvement consists in forming the double twist auger with a single cutting lip, and this is successfully effected by so twisting the pod of the augers that one of the hollows becomes deeper than the other, and the deepest hollow is connected with the cutting lip. The superiority of the auger thus made consists in this—that it is stronger, less liable to spring or bend, and more durable than the single twist auger, and also in boring more rapidly and making a straighter hole than the common double twist."

Claim.—"What I claim as my invention, is the combination of a double twisted plate or pod auger, having its hollows of unequal depths, with a single cutting lip, by whatever process the plate may be twisted."

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30. For an *Improvement in Clover Hullers;* J. K. Mitchell, Danville, Columbia county, Pennsylvania, July 20.

The patentee says,—"The nature of my invention consists in the construction of a hulling cylinder and concave so as to hull grain more perfectly, and attaching thereto a "shaker" and fan in such a way as to clean the seed perfectly, and separate the chaff from the tailings."

Claim.—"What I claim as my invention, is the combination of the runner and concave, constructed and arranged as set forth. I also claim the arrangement of the sieves in the manner set forth."

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31. For an *Improvement in the Machine for Sweeping Streets;* Pliny Robinson, Leonardsville, Madison county, New York, July 20.

The patentee says,—"The nature of my invention consists in the employment of a revolving oblique brush attached to a frame drawn by horse or other power, for sweeping streets and other similar purposes, and loading the dirt into carts."

Claim.—"What I claim as my invention, is the combination of the oblique revolving brush, with a carriage, for sweeping streets, &c.; the motion of the brush being taken from the wheels of said carriage, constructed and arranged in the manner set forth."

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32. For an *Improvement in Sawing and Planing by Combining a Plane with a Saw;* Elijah Pratt, North Granville, Washington county, New York, July 20.

The patentee says,—"The nature of my invention consists in connecting with the saw of a saw-mill a plane in the same frame, both being held by the same stirrups; and also the method of constructing the plane therefor."

Claim.—"What I claim as my invention, is the combination of the plate containing the plane, constructed and arranged as set forth, with the saw of a saw-mill, in the manner and for the purpose set forth."

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33. For an *Improvement in the Construction of Hydrants;* Robert H. Colvin, Columbia, Lancaster county, Pennsylvania, July 20.

The patentee says,—"The nature of my invention consists in forming and arranging the joints and valves of a hydrant so as to prevent leakage under the heaviest pressure, and also from wear."

Claim.—"What I claim as my invention is, 1st, combining the rod and cap in the manner described so that they closely fit the bore and excavation made to receive them, and break joint to prevent leakage, as set forth. I claim the movable pin and collar for stopping the waste pipe, in combination with the valve and rod, constructed and arranged as set forth."

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34. For an *Improvement in the Pistons and Stuffing Boxes of Steam Engines;* E. K. and C. Eversole, St. Louis, Missouri, July 20,

The patentees say,—"Our first improvement consists in the manner of constructing the piston so as to give to it a degree of elasticity independent of that existing in the ordinary hemp or other elastic packing, by means of which arrangement we are enabled to run an engine for seven or eight days without its being necessary to take off the cylinder head for the purpose of repacking. Our second improvement consists in the manner in which we construct the stuffing box of the cylinder."

Claim.—"What we claim as new, is, 1st, the manner in which we construct our elastic piston by securing the main body thereof and the follower together, by means of screw bolts passing through spiral springs, as described, so that the follower shall have a yielding motion to and fro, in the manner and for the purpose set forth. 2d. We claim the constructing of the stuffing box of the piston rod, so as to allow of a lateral motion to the same so far as to compensate for any ordinary deviation of the cylinder from its correct position; such lateral motion being attained by an arrangement of the respective parts, substantially as set forth."

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35. For an *Improvement in the Machine for Drilling Iron, &c.;* Amos Morgan, Wooster, Wayne county, Ohio, July 20.

The patentee says,—"The nature of my invention consists in connecting springs with a drill so as to be confined in a box and have a limited action; the stock of said drill being furnished with a screw and movable nut on it to draw back the drill when the hole is made; the springs serve to keep up the proper pressure on the drill on the iron while in operation."

Claim.—"What I claim as my invention, is the combination of the spring drill with the set screw and nut for gauging the depth which the drill is to enter, and allowing it to feed as it bores, and be drawn back rapidly."

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36. For an *Improvement in the Manufacture of Hats and Bonnets of Horse Hair;* Charles L. Nor, City of New York, July 20.

The patentee says,—"The nature of invention consists in the application of horse hair, white particularly, and all other colors, if necessary, in the manufacture of ladies' and gentlemen's hats and caps."

Claim.—"What I claim as my invention, is in the sewing the edges of the braid together with horse hair, which gives the hat or bonnet the appearance of being made in one piece, and also saves about one-third of the braid required for a hat or bonnet made in the ordinary way, and makes them lighter, more durable, and also more pleasant to the wearer, and are not so liable to injury in the process of cleaning."

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37. For an *Improvement in the Manner of Opening and Closing the Valves of Steam Engines;* F. E. Sickels, City of New York, July 20.

Claim.—"What I claim as new, is the application of the cam and lever in conexion with any of the ordinary apparatus for working the exhaust valves of steam engines, or in any otherwise, so as to effect the quicker opening of the exhaust valves at or near the first periods of their movements, and the quicker closing of the exhaust valves at or near the last periods of their movements.."

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38. For an *Improvement in Machines for Cleaning Unginned Cotton;* Robert M. Livingston, Mobile, Alabama, July 20.

Claim.—"What I claim as my invention, is the peculiar construction of the fanner, not in its spiral form, but in its combination with beaters to

be applied to the cleaning of unginned cotton, in freeing it of dirt, leaf, and trash."

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39. For an *Improvement in Electrifying Machines;* Elijah Cole, Richmond, Jefferson county, Ohio, July 22.

Claim.—"What I claim as new, is the combining of the electric, or plate to be excited, with the battery, and of operating the same by an arrangement of parts, as set forth; the electric being placed horizontally, and being made to rotate by means of the lever and its appendages; the battery, also, being composed of a series of coated plates, and being connected with the electric as set forth, and the whole being combined and operating substantially as set forth."

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40. For an *Improvement in Constructing Machines for Making Bread;* William Carr, Bath, Lincoln county, Maine, July 22.

Claim.—"What I claim as new, is the effecting the combined movement of the cylinders and brake, for the purposes specified."

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41. For an *Improvement in Ploughs;* John Moore, Lexington, Fayette county, Kentucky, July 22.

The patentee says,—"The nature of my invention consists in constructing a wrought iron plough so that it can be increased or decreased in size to answer for one or more horses, at pleasure, and be made with or without a cutter in front of the mould board, for breaking up or other ploughing."

Claim.—"What I claim as my invention, is the combination of the share with the mould board and land-side in the manner and for the purpose set forth."

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42. For an *Improvement in Constructing Horse Collars;* Nathan Post, Madrid, St. Lawrence county, New York, July 22.

Claim,—"What I claim as my invention, is the manner of constructing horse collars of felt, or felted cloth, or leather, in the way described, in combination with sponge stuffing, the whole being constructed and operating as set forth."

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43. For an *Improvement in the Mode of Casting Butt Hinges;* Richard W. Belson, Danville, Columbia county, Pennsylvania, July 26.

The patentee says,—"The nature of my invention consists in the manner of forming the metallic core and the combination of washers therewith for casting hinges, by which a more perfect joint is made and greater expedition and neatness insured."

Claim.—"What I claim as my invention, is constructing the core for casting butt hinges in the manner described, so that they can be removed from the pivot wire of the hinge, as set forth. I also claim in combination with the core, the metallic disks, as set forth."

44. For an *Improvement in Smut Machines;* Joseph Klein, Low Hill, Lehigh county, Pennsylvania, July 26.

The patentee says,—"The nature of my invention consists in the formation and arrangement of the beaters on the runner so as to clear the grain from smut in the most effectual way, the smut being driven by said beaters out of the case, which has oblong slits in it for that purpose, and cleaning the grain after leaving the machine."

Claim.—"What I claim as my invention, is the combination of the screen, inclined board and slide, with the fan and beaters, in the manner set forth."

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45. For an *Improvement in Garlic Separators;* W. C. Grimes, City of New York, July 26.

The patentee says,—"My invention consists in the combination of two rollers of such form and material as to separate wheat and garlic when made to pass as they revolve in a thin sheet or stream between them."

Claim.—"What I claim as my invention, is the combination of a grooved roller with one formed in part of India rubber, or other elastic material, and operating as set forth. I also claim the combination of a comb or toothed plate with the grooved roller, the former being for the purpose of removing the garlic and other foreign matter from the grooves in the latter."

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46. For an *Improvement in Machinery for Repairing and Improving Roads;* Samuel Mallory, Alexander, Genesee county, New York, July 26.

Claim.—"What I claim as my invention, is attaching the shears to the inclined sides of the frame having an opening at the rear for the escape of the earth, &c., and which can be closed with a gate, as set forth."

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47. For an *Improvement in Threshing Machines;* William Eaton, Jr., Upper Alton, Madison county, Illinois, July 28.

Claim.—"What I claim is, 1st, the combination of the flutter shaft with the lattice band, in the manner described. 2d. The arrangement of the trash trough and the air duct, in combination with the lattice band. 3d. The arrangement of the additional seive, and also in combination with the threshing machine, the spiral conveyor and the elevator, as set forth."

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48. For an *Improvement in the Manner of Constructing Steam Boilers;* Zenas C. Robbins, St. Louis, Missouri, July 28.

The patentee says,—"My boiler consists in two principal parts, one of which I denominate the double concentric boiler, and the other the larger boiler, or feeder. These are to be so connected together as to constitute one combined boiler or steam generator. Both of these boilers are cylindrical, and are, usually, both placed horizontally and parallel to each other. The double concentric boiler may be one-half, or one-third, more or less, of the length of the large boiler or feeder; in it is contained the furnace, the heat from which is to generate steam in the concentric boilers by which

the furnace is surrounded, and likewise in the large boiler or feeder, for which latter purpose a flue leading from the double concentric boiler is carried twice through the large boiler, whence it escapes through a chimney."

Claim.—"I claim the manner of combining my furnace with the annular boiler, and with the large cylinder, as described under my third modification; the large cylindrical boiler being, in this case, substituted for what I have called the large boiler or feeder."

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49. For an *Improvement in Locomotive Engines:* Ross Winans, Baltimore, Maryland, July 28.

Claim.—"I claim as my invention, the construction and use of a locomotive engine, having either six or eight driving wheels, the angles of which are placed parallel to each other, and which are permanently to preserve this parallelism during the whole action of the engine, whether running upon straight or curved roads; the said angles having sufficient end play to allow the wheels, when the whole of them are provided with flanches, to adapt themselves to the curvatures of the road; or instead of this end play of the axles, the constructing of two of the pairs of wheels where eight are used, without flanches, the motive power from the steam engine to be transmitted to the first pair of driving wheels, through the intermedium of a fifth axle, furnished with spur wheels, which gear into small spur wheels or pinions on the axle of the first pair of driving wheels, and the power from these wheels being transmitted to the whole system of driving wheels, by means of cranks on the axles of said wheels and suitable connecting rods, as set forth. In the case where six driving wheels only are used, the locomotive engine may be similar in all respects to that having eight driving wheels, with this exception, that one pair of wheels are left out, or are not so connected as to constitute driving wheels, the pair not used as such not having cranked axles and connecting rods, whilst in all other respects the combination would be the same as when eight driving wheels are used. And a locomotive thus constructed with six driving wheels may be combined with any, either, or the whole of the devices mentioned in my second and third claims.

"2d. I claim in combination with an engine constructed as designated in my first claim, the apparatus for equalizing the pressure upon the contiguous wheels, which apparatus consists of a vibrating spring, connected by rods with the boxes of the driving wheels, or of a vibrating lever and spring analogous thereto, in the manner set forth. And although I have, as I believe, fully set forth and designated the combination of parts, devices, or elements necessary to the construction of a locomotive engine upon the plan invented by me, I do hereby further declare, that I do not claim either of the respective parts, devices or elements, taken individually; but that I claim them only as combined with each other in the manner designated in my first recited claim, and with or without the respective devices designated in my second claim. Nor do I claim the arrangement either of six or eight driving wheels in a locomotive, the axles of which continue parallel (and which constitutes the first element of the foregoing claims,) when actuated by connecting rods and cranks, as in my fourth

element, and having a lateral and vertical vibration, described in my second and seventh elements in the description, but differing substantially in the mode of communicating the power to the first pair of driving wheels forming the third element of my improvements."

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50. For an *Improvement in the Safety Valve for Steam Engines;* Wm. Duff, City of Baltimore, Maryland, July 28.

The patentee says,—"My improvement consists in causing a portion of the water from the boiler to constitute a portion of the weight that is to bear upon the safety valve of a steam engine."

Claim.—"What I claim as new, is the employment of a portion of the water contained in a steam boiler, to constitute the weight, or a part of the weight, by which a safety valve is to be held down, and which water will cease to constitute such weight when it has descended to a given level; the said weight of water being rendered effective by means of apparatus, constructed and arranged substantially in the manner set forth."

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51. For an *Improvement in the Machine for Sweeping or Cleaning Streets;* Alexander Jones, City of New York, July 28.

Claim.—"What I claim as new, is the manner in which I have arranged the revolving brush wheel so as to turn on the rear brush ends of the vibrating arms, or levers, that have their fulcrum on the main axle of the cart wheels, in combination with the shoe and endless apron attached to the main or cart frame; the shoe being suspended by a chain or cord to the arms, by which arrangement the brush and shoe may be lifted up from the street, and by the flexibility of the chain, the brush may be made to bear with any degree of pressure upon the shoe. I do not claim the brush, shoe, and endless apron, independently of this particular arrangement. I do not intend to limit myself to any particular material for forming the revolving brushes, as these may be made of splints of any suitable kind of wood, of whalebone, or of other elastic material. The splints or fibres may be firmly confined between bars of metal by intervening rods of iron; the whole being confined by means of screw bolts; and it will be found advantageous to have the fibres of double the required length, so that they may be folded together in the manner of bristles in those brushes where they are secured by wires."

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52. For an *Improvement in Uterine Supporters;* A. H. McNair, City of Philadelphia, Pennsylvania, July 28.

Claim.—"What I claim as my invention, is the manner of applying the instrument I have termed abdominal supporter and uterine restorer; namely, by making gradual pressure upon the uterus by means of the ring in the centre of the concaved end of the restorer armed with the silk cord, by which the pressure of the restorer is graduated. Further, the manner of changing the position of the restorer, by means of the hooks to which the silk cord is attached, on the external surface of the supporter, as set forth."

List of American Patents which issued in the month of August, 1843, *with Exemplifications, by* CHARLES M. KELLER, *late Chief Examiner of Patents in the U. S. Patent Office.*

1. For an *Improvement in Water Wheels;* John Caldwell, Northfield, Franklin county, Massachusetts, August 4.

The patentee says,—"My invention consists in the combination of the reaction wheel and tub wheel; when the common reaction wheel is turning at the utmost velocity which any given power of water can impart to it, the water, after being thus used, falls powerfully from the apertures, having spent its entire force; when this reaction wheel is more or less loaded by the propelling machinery, its velocity is diminished and the water gushes with more or less force, (as the wheel is more or less retarded,) from the apertures made for its escape. It is to save this wasted force that my invention is applied."

Claim.—"What I claim as my invention, is the combination of the tub wheel and the reaction wheel, in the manner set forth."

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2. For an *Improvement in Lard Lamps;* Henry Rose, Rushville, Schuyler county, Illinois, August 4.

The patentee says,—"The nature of my invention consists in adding a ventillator to the lamp for communicating with the chamber below the piston and projecting the end of the screw that elevates the piston above the wicks, so that it can be turned without moving the lamp, by which means the lamp is less liable to leak or get out of order."

Claim.—"What I claim as my invention, is, 1st, the projection on the screw above the wicks of the lamp, by which it can be turned, in combination with the lamp constructed and arranged as set forth. I also claim the tube combined with the movable piston lamp in the manner and for the purpose set forth."

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3. For an *Improvement in Smut Machines;* Thomas Brown, Rome, Oneida county, New York, August 4.

Claim.—"What I claim as my invention, is the revolving cylinder with bearded or roughened beaters projected from the end of the cylinder, in the manner and for the purpose set forth; and also the arrangement of the spouts and trunks, in combination with the aforesaid case and cylinder."

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4. For an *Improvement in Corn Shellers;* William Manning, South Trenton, Mercer county, New Jersey, August 4.

Claim.—"What I claim as my invention, is the application to corn shelling machines of cast or wrought iron plates, (with teeth on their edges,) let in flush with the top surface of the inclined floor, and secured thereon by screws, for the purpose of preventing corn from wedging between the wheel and floor, as set forth."

5. For an *Improvement in Winnowing Machines;* G. W. D. and Joseph Culp, Allenville, Switzerland county, Indiana county, August 4.

The patentees say,—"The nature of our invention consists in combining the shaking shoe with the wind wheel in such a way that all parts of the shoe shall have nearly the same motion, and the grain be acted on in the most effectual manner."

Claim.—"What we claim as our invention, is the combination of the shoe, constructed and suspended in the manner set forth, with the arrangement of the crank and pitman rod, as described."

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6. For an *Improvement in Mill-Saw Guides;* J. Norcross, Eastonton, Putnam county, Georgia, August 4.

Claim.—"What I claim as my invention, is the self-regulating guide, which fastens by a single pin in front of the saw, constructed and operating substantially as set forth."

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7. For an *Improvement in Stoves;* James Robb, Lewistown, Mifflin county, Pennsylvania, August 4.

Claim.—"What I claim as my invention, is, 1st, the arrangement of the door in front for cleaning the bottom flue. 2d. The plate for closing the space in the front plate, in front of the grate, and serving as a hearth plate and regulator."

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8. For an *Improvement in Vises;* J. J. Markham, assignee of E. G. Matthews, Worcester, Massachusetts, August 11.

Claim.—"I claim moving the jaw by the combination of an upper and lower screw connected and worked together by a link chain and cog wheels, and in combination therewith I claim the slide for guiding and keeping steady the movable jaw, as set forth."

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9. For an *Improvement in Shower Baths;* Nathaniel Waterman, Boston, Massachusetts, August 11.

Claim.—"I am aware that a portable pneumatic apparatus for shower baths, constructed with a chamber or vessel having a perforated bottom and a tube or opening at top, to be closed by the thumb, has been long known and used, and therefore I do not claim such an article; but I do claim the arrangement of the fixtures applied to such an apparatus by which the chamber thereof can be filled, raised above the head, and discharged by hand, as set forth, viz: in combining with the valve lever a finger rest applied to the side of the fountain near its top, and also a long rod, which shall extend from said lever nearly down to the bottom of the fountain, and there terminate in a ring, or other contrivance of like nature, as set forth."

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10. For an *Improvement in Cooking Stoves;* Joel Green, Rochester, Monroe county, New York, August 11.

Claim.—"What I claim as new, is the manner of forming and combining

with the stove the two movable plates; the said plates being arranged as, and effecting the objects set forth. I also claim the manner of supporting the drop doors of the oven by the extension of the hearth, and the curved or depressed part which terminates it."

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11. For an *Improvement in Coffee Mills;* John Luther, Warren, Bristol county, Rhode Island, August 11.

The patentee says,—"The nature of my invention consists in constructing the mill of a flat shape, with an aperture at the top in the edge of the shell of the mill where the hopper is inserted, by which the grains to be ground, when put into the hopper, fall directly upon the top of the wheel, and the chamber into which the grains pass from the hopper is extended below and around the shaft, so that the whole space measured by the surface of the wheel may be filled with the grains which may be ground at the same time. I also use a gate in the hopper of the mill, which is raised and lowered by means of a screw, by which the feeding of the mill is regulated. In consequence of the flat shape of the mill, the grooves of the two parts of the mill do not come in contact, and wear upon each other."

Claim.—"What I claim as my invention, is the extending the chamber into which the grains pass from the hopper, below and around the shaft, whereby the grain is presented to a greater grinding surface, as set forth."

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12. For an *Improvement in Door Plates;* E. J. Lause, City of New York, August 11.

Claim.—"What I claim as my invention, is the combining of the transparent door plate with the ordinary metallic door plate; also the combination of levers and bolts to operate the slide, constructed in the manner set forth."

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13. For an *Improvement in the Machine for Forming Horse Shoes, Chain Links, &c.;* John F. Winslow and Thomas Osgood, Troy, Rensselaer county, New York, August 11.

Claim.—"What we claim as our invention, is the combination of the levers, constructed and arranged as set forth, with the former in the manner as set forth. We also claim in combination with the above the sliding frame having a cutter attached."

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14. For an *Improvement in Leaf Holders;* Joseph Nock, Washington City, District of Columbia, August 11.

Claim.—"I claim in combination the use of the square rods, carrying the points with the leather cover, by the intervention of the strips of metal, as set forth. In this claim I will observe, that the employment of the square rods, in combination with the other parts, is not a mere change of form, but is accompanied with the substantial advantages set forth. I claim, also, the manner of constructing and combining the lock with the within described apparatus; that is to say, I claim the arranging the

spring catch, the bolt, and the other parts of the lock, in such manner that said bolt shall shoot into the holes in the middle nut, and shall otherwise be acted upon, and operate in the manner set forth."

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15. For an *Improvement in Winding Wire or Twine on Brooms;* William Beaman, Salem, Massachusetts, August 17.

Claim.—"What I claim as my invention, is the combination of the hollow shaft to receive the broom handle with the screw guide and wired roller or reel, governed by springs for receiving the wire, as set forth."

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16. For an *Improvement in Machinery for Making Various kinds of Twine and Small Cord;* Hugh McCubben, Petersburg, Virginia, August 17.

Claim.—"What I claim as new, is the combining together of the twisting, the intermediate traveling, and the back twist machines, so constructed as that they will pass over stationary stakes, as set forth. I also claim the manner of combining the sliding frame with the intermediate traveling frame, by which it is allowed to run in grooves from the back to the front of said frame. And these improvements I claim, whether the within described machine be made precisely in the form set forth or in any other producing the same effect."

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17. For an *Improvement in Locks for Safes, Bank Vaults, &c.;* William Hall, Chelsea, Suffolk county, Massachusetts, August 17.

Claim.—"What I claim as my invention, is constructing the levers or sliding plates with additional slots playing upon a fixed stud projecting through them and inserted in the lock case, and operating or throwing forward (with the bolt) one or more of the sliding plates by a corresponding number of bits of secondary or supplementary series of bits affixed to the key, and in connexion with those by which the remaining levers are elevated and actuated, as set forth; the whole being arranged substantially as set forth."

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18. For an *Improvement in Machines for Cutting Shingles, Veneers, &c.;* Robert A. Quartermas, Auburn, Oakland county, Michigan, August 17.

The patentee says,—"My improvement consists in the use of an apparatus in the table before each knife for regulating the throat of the knife, and the thickness of the article to be cut."

Claim.—"What I claim as my invention, is the manner in which I regulate the throat of the knives or cutters, and the thickness of the article to be cut, by means of an apparatus consisting of an angular plate and circular limbs, which are let into grooves in the table; the apparatus being held in place and adjusted by set screws connected with the plate and limbs, the latter serving as ways for sustaining the blocks; the whole being formed and operating substantially as set forth."

19. For an *Improvement in Evaporating Saccharine Juices;* Alfred Stillman, City of New York, August 17.

Claim.—"What I claim as my invention, is, 1st, the substituting any number of steam evaporators or clarifiers, constructed and operating as set forth, for any number of the ordinary train of coppers or kettles, to the effect that the steam boilers may be brought nearer to the strength of the fire from the train. 2d. The arrangement of the pipes passing through the liquid, in combination with the double bottoms, as set forth. 3d. The method of applying the exhaust steam from the engine; that is to say, by closing the exhaust pipe by means of a loaded valve, so as to maintain within it a pressure greater than that of the atmosphere, all as set forth."

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20. For an *Improvement in Ships' Cabooses;* James Wilson, City of New York, August 17.

Claim.—"What I claim as my invention, is the sectional guard of soap stone, clay, or any other substance attached or inserted in the fire plate, single or double, with one or more sections, as set forth. 2d. I use the double dovetail shutter or damper in combination to give more perfect direction to the fire round the entire surface of one or more ovens. 3d. I claim the employment of projecting flanches in the upper edges of the boiler, formed in the manner and for the purpose set forth."

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21. For an *Improvement in Cooking Stoves;* J. J. Anderson, Putnam, Muskingum county, Ohio, August 17.

The patentee says,—"My first improvement consists in the manner in which I combine a chamber of combustion, or fire place, for the burning of coal with a stove, the body or heated air chamber of which is in the ordinary form of those used for burning wood; and my second improvement consists in the dispensing entirely with all inside, back, or other division plates; the same plates which constitute the exterior of the stove serving to form the flue which leads to the elevated oven, and the whole interior of the stove. My chamber of combustion, or fire place, for containing the coal, consists of longitudinal trough-like depression, below the body of the heated chamber, and which is open at top, and is furnished with grate bars at its lower side, to admit the draught from the ash pit below it. I most commonly make my stove double; that is to say, with two fire chambers, one or both of which may be used as required. Both the fire chambers may be formed for the burning of coal, or one of them may be adapted to wood and the other to coal. When my second improvement alone is used, it may be applied to a stove in which wood is the only fuel used."

Claim.—"What I claim as my invention, is the combining with the stove furnished with flues leading to an elevated oven, or chamber of combustion for coal, consisting of a trough-like receptacle, depressed below the bottom plate of the heated air chamber, and extending along the whole width, or nearly the whole width, of the stove. I also claim the manner of forming the flues leading to an elevated oven, by a continuation of the top and bottom plates of the heated air chamber, or of the

stove, when constructed for burning wood, and the consequent dispensing with all interior plates, in the manner set forth. I also claim the combining of the additional oven with the double stove, as set forth."

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22. For an *Improvement in Hanging House Bells;* Edward Stetson, Bedford, Bristol county, Massachusetts, August 17.

Claim.—"I claim the combination of a series of drawing wires, the carriage, the series of helical springs, that of the connecting wires, and the balance levers or other similar contrivances to which the number plate was hung; the whole being constructed and arranged as set forth, and for the purpose of depressing one or more of the number plates, and retracting the carriage after the same. Also, the combination with the balance levers of the vibrating plate, arranged and actuated by a movable carriage, and the mechanism connecting the two; the same being for the purpose of retaining the balance lever and number plate in their depressed position until another balance lever is operated, and then permitting the first lever to ascend while the other descends; all as described. Also, the combination with the series of depressing balance levers and number plates of a bell, whose hammer is actuated by the carriage, or other suitable mechanism; the whole being substantially as set forth."

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23. For an *Improvement in Soles of Boots and Shoes;* R. B. Ruggles, assignee of Walter Hunt, City of New York, August 17.

Claim.—"What I claim, is an improvement upon the French plan, or the plain plugs, as described, which improvement consists in preparing the soles, heels, &c., of boots and shoes previous to manufacturing the same into shoes, &c., by inserting in said soles, &c., in the manner set forth, metallic screw rivets, or plugs made from rods or wire, which is topped with a screw plate or dies, or otherwise stamped, cut, indented, or made, with spiral, diagonal, or transverse threads, grooves or indentations, in such manner as to hold more firmly when driven into said soles, by means of said screw, stamped, cut, or indented plugs or rivets; which improvement renders the soles, &c., thus prepared, more durable and useful, in consequence of their retaining the screw or indented plugs more firmly than the plain smooth plugs, and for which said improvement, in the combination of said screw, rivets and soles, prepared as set forth, I solicit letters patent."

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24. For an *Improvement in Machines for Printing;* Charles Thurber, Worcester, Worcester county, Massachusetts, August 26.

Claim.—"What I claim as my invention, is, 1st, the combination of the movable carriage and the platten with the wheel containing the type, substantially in the manner and for the purpose set forth. 2d. I claim the employment of the wheel having a set of keys around its periphery, on which are types for printing, constructed and arranged as set forth. 3d. I claim the employment of the ratchet wheel, pinion and rack, in combination with the keys and pawl for forcing forward the carriage; and also in combination therewith the lever for shortening the distance the carriage

has to move. 4th. I claim the combination of the guide and wire with the keys for regulating their motion, as set forth. 5th. I claim the inking apparatus in combination with the wheel of types, arranged in the manner and for the purpose made known. 6th. I claim in combination with the above apparatus the employment of movable ways for elevating and depressing the carriage, substantially in the manner set forth."

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25. For an *Improvement in Portable Horse Powers;* Israel J. Richardson, City of New York, August 26.

Claim.—"What I claim as my invention, is placing the fly-wheel of a portable horse power in a frame separate from the horse power or machinery to be driven or propelled, and connected with the line shaft beyond the band wheel, as set forth."

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26. For an *Improvement in Making Salt;* Isaac Noyes, Kanawha Salines, Kanawha county, Virginia, August 26.

Claim.—"My claim is in the construction and application of a case or covering to the metallic pipes, with lids, sliding doors, openings, &c., therein, so as to pass the steam through the metallic pipes easily, and afterwards to distribute the heat to the brines in the cistern gradually, and preserve a temperature in the brines in the cistern to the degree adapted to the manufacture of coarse salt. It is for the use and application of the case or covering aforesaid in making coarse or alum salt with metallic pipes, a thing which has not hitherto been done successfully."

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27. For an *Improvement in Marking Boxes, &c.;* E. Wilson, assignee of J. C. Walker, Concord, New Hampshire, August 26.

Claim.—"I claim constructing the types of felt, or any other absorbing material of the same effective character, applied to a plate in the manner set forth. Also, curving the tablet (upon which they are composed or arranged for the purpose of printing,) longitudinally, or in other respects, substantially in the manner and for the purpose set forth. Also, the combination with the tablet of a box or magazine arranged upon it, in the manner set forth."

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28. For an *Improvement in the Manufacture of White Lead;* Smith Gardner, City of New York, August 26.

Claim.—"What I claim as new, is the introduction of carbonic acid, or of carbonic acid in mixture with a portion of atmospheric air, into closed vessels, in which fragments of metallic lead, in mixture with litharge or protoxide of lead, in equal or varying proportions, are subjected to long continued attrition in water, for the purpose and in the manner set forth."

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29. For an *Improvement in Clocks;* Charles Kirk, Bristol, Hartford county, Connecticut. August 26.

The patentee says,—"My first improvement consists in the forming of boxes or barrels, which are to contain the springs, by casting them in one

piece with the pillar plate, by means of which device a large amount of labor is saved, as these parts of the instrument may be thereby manufactured at one-fourth the usual cost. My second improvement consists in a new and simple construction and arrangement of the apparatus which constitutes the striking part of the clock."

Claim.—"What I claim as new, is the manner of forming the pillar plate and the barrels or boxes for containing the springs of one single piece of cast metal. I claim, also, the manner of forming and combining the lift piece, the click, the wheel, and their appendages, arranged and operating in the manner set forth, for the purpose of governing the striking part of the clock."

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30. For an *Improvement in Straw Cutters;* John K. Landis, East Hempfield, Lancaster county, Pennsylvania, August 26.

Claim.—"What I claim as new, is the manner in which I have combined and arranged the cam, the lever, and the feeding apron, with the trough for holding the straw in the machine."

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31. For an *Improvement in Machines for Forging, Drawing, Swedging, or Forming Spindles, Rollers, Bolts, and Various other Articles in Metal;* John Miller and E. M. Dorr, Clapville, Worcester county, Massachusetts, (assignees of William Ryder, Great Britain,) August 26.

Claim.—"We claim as our invention, the improved apparatus for forging, drawing, moulding, or forming spindles, rollers, and various other like articles in metal, as set forth; that is to say, we claim the manner of combining the eccentric cam, or crank, with the cradle piece, the top and bottom punch bars or swage holders, and with their swages, the hammers being provided with a spring, for the purpose of lifting or keeping up the punch or cradle piece against the eccentric. I also claim the employment of elastic substance, for the purpose and in the manner set forth. I also claim the combining with such a machine the apparatus for raising and lowering the anvils; and these devices I claim as applied to these purposes in whatever manner the construction, form or dimensions of the apparatus may be modified or varied, whilst the same ends are attained by means substantially the same."

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32. For an *Improvement in Tailors' Marking Pencils;* W. Coover, Erie, Pennsylvania, August 26.

Claim.—"I claim the mode described of constructing a marking pencil for tailors; that is to say, combining with a flat tube the screw stem with its follower, in the manner and for the purpose set forth."

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33. For an *Improvement in Sugar Works;* Robert Rillieux, New Orleans, Louisiana, (assigned to Samuel V. Merrick and John H. Towne,) August 26.

Claim.—"What I claim as my invention, is the employment of a weight-

ed throttle, or other regulating valve, in the main steam pipe leading from the boiler to the evaporating pan or pans, and the steam engine, which valve shall be situated between the induction valve of the engine and the evaporating pan or pans, for the purpose and in the manner set forth. I claim a vacuum pan, or pans; that is to say, an evaporating pan, or pans, connected with a condenser, in combination with an evaporating pan, or pans, or boiler, in which the saccharine juice, or other fluid, is evaporated under a pressure, lower, equal to, or greater than, the atmosphere, which last mentioned pan, or pans, or boiler, prepares the saccharine juice, &c., from the vacuum pan, or, pans, and at the same time supplies the necessary vapor from the saccharine juice, &c., to complete the evaporation or concentration of the syrup, &c., in the vacuum pan or pans, as set forth. I claim surrounding the evaporating column, known as the champonoise column, with an outer column or jacket. I claim the employment of a differential thermometer to regulate the concentration of the syrup, in the manner set forth; and I also claim the so constructing the differential thermometer that all the range of its action up to the point desired shall not act on the regulating valve, as set forth."

List of American Patents which issued in the Month of September, 1843, *with Exemplifications by* CHARLES M. KELLER, *late Chief Examiner in the U. S. Patent Office.*

1. For an *Improvement in Piano Fortes;* Jones Chickering, Boston, Massachusetts, September 1.

Claim.—"What I claim as my invention, is supporting the strings through a solid ledge cast directly upon the lower part of the inclined wire front plate, through suitable apertures of which (ledge) the strings are to be passed in the manner set forth; the tone of the high notes being thereby not only greatly improved, but rendered more durable. I also claim the mode of counteracting the strain of the wires on certain parts of the iron frame, and thereby preventing vibration of such parts and accents to the tone; or in other words, my peculiar method of constructing the metallic frame of a grand piano, by casting the same with a series of bars, in combination with an inclined front plate and vertical ledge and curved side plate, substantially as set forth."

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2. For an *Improvement in Hot-Air Stoves;* Moses Pond, Boston, Massachusetts, September 1.

Claim.—"What I claim as my invention, is the combination of the chamber of combustion, the interior concentric cold air space immediately surrounding the said chamber, the concentric flue or smoke space encircling the said cold air space, and the interior concentric cold air space which surrounds the flue space; the whole being arranged and operating as set forth. Also, the particular method set forth of causing the smoke and gases to be retained and to circulate within the flue space, by the horizontal plate in combination with the vertical partitions immediately over

and under said plate; the same being substantially as set forth. Also, the combination of the chamber of combustion, the interior concentric cold air space immediately surrounding the said chamber, and the concentric flue or smoke space encircling the said cold air space."

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3. For an *Improvement in Hydrants;* S. C. Higbie, Oppenheim, Fulton county, New York, September 1.

The patentee says,—"The nature of my invention consists in fitting a tubular valve into the hydrant, having two series of holes in it, with a spring to close the lower ones. The lower set communicates with the water pipe, the other with the leak; and connecting therewith a vacuum chamber to receive the water from the eduction pipe and prevent its freezing up, which vacuum chamber can also be made to act and close the induction valve."

Claim.—"What I claim as my invention, is the tubular valve having two rows of holes arranged in it, one above the other, and a packed valve attached to the end, constructed and arranged as set forth, in combination with the chamber and piston, by means of which the valve is raised, and which forms a reservoir for the water in the pipe when the supply is cut off. 3d. I claim the combination of the air chamber with the hydrant, constructed and combined in the manner set forth."

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4. For an *Improvement in Pistons and Slide Valves of Horizontal Steam Engines;* Benjamin H. Brown, Philadelphia, Pennsylvania, September 1.

The patentee says,—"The nature of my invention consists in extending the packing on the piston over as much of the surface of the rim of the followers on the top, as the pressure of the steam, if allowed to act upon that surface, would equal the weight of the piston. And in fitting in my slide valve, a cap packed steam-tight on the balance, which cap being pressed upwards by the force of the steam upon the rim of the cap keeps it tight against the top of the steam chest."

Claim.—"What I claim as my invention, is the applying the steam in the cylinders of horizontal steam engines to raise or counteract the weight of the piston by packing off more of the top surface of the piston than the bottom, which I style the self-counterpoised piston: and a self-adjusting cap in balance slide valves, which being fitted and packed steam-tight over the balance, is kept against the steam chest by the pressure of the steam, in the steam chest, on the rim of the cap, or by a spring between the top of the balance and the inner surface of the cap, thereby compensating for the wearing away by friction, and the contraction and expansion of the metals, and preventing the steam from acting on the top of the cap and destroying the balance, which I style a movable self-adjusting cap."

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5. For an *Improvement in Cooking and Air Heating Stoves;* Benjamin Shepard, Boston, Massachusetts, September 1.

The patentee says,—"My improvements consist in a certain peculiar

arrangement of the chamber in which cold air is introduced to be warmed, and from thence conducted to different apartments; and also in the arrangement of the air and smoke flues surrounding the oven; the stove being in its character similar to that for which letters patent were granted to me on the thirteenth day of May, eighteen hundred and forty-two."

Claim.—"What I claim as my invention, is the combination with the furnace or fire place and its flues, of the side passages, the end passage, and the air chamber extending over the furnace, the whole arranged as set forth. Also, placing the hot-air chamber (which is combined with the flue space) directly between a fire place, or grate, or boiling chamber, or flue space over the said hot-air chamber, and flues passing in direct contact with the sides of the air chamber, in the manner and for the purposes set forth. Also, the peculiar arrangement of the entrance and exit air and smoke pipes, of the spaces surrounding the oven, by which arrangement the paths of the air and smoke are caused to pass by or cross each other, as set forth, viz: placing the entrance air pipe between the entrance smoke pipes, in connexion with the peculiar method of arranging the discharge air pipes on each side of the discharging smoke pipe; the whole being substantially as set forth."

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6. For an *Improvement in the Construction of Tubular Boilers for Generating Steam;* C. W. Bentley, Baltimore, Maryland, September 1.

The patentee says,—"The nature of my invention consists in combining wrought iron tubes and case with a furnace and cast iron heads, so as to make a cheap and efficient tubular boiler."

Claim.—"What I claim as my invention, is casting the heads on to the wrought iron tubes in combination with the method of attaching the external casing or boiler to the heads by shrinking the same thereon, in the manner set forth."

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7. For an *Improvement in Lard Lamps;* Harvey Tomlinson, Geneva, Ontario county, New York, September 1.

The patentee says,—"My improvement consists in the manner in which I attach a glass chimney or burner thereto, and raise and depress the same, and in the manner in which I regulate the draught that passes through a central tube to supply air to the interior of the hollow wick."

Claim.—"What I claim as my invention, is the manner of regulating the draught thereof by the combined operation of the ventilating ring, or ferule, and the shifting chimney or burner; the respective parts being so formed and arranged as to operate in the manner made known."

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8. For an *Improvement in Fire Ladders;* Morton B. Hill, Fairfield, Greene county, Ohio, September 1.

Claim.—"What I claim as my invention, is the combination and arrangement of the machine for preserving life and property in case of fire; that is to say, I claim the combination of the pole, wheels, pullies, rope or chain ring, with the suspended chain, in the manner and for the purposes set forth."

9. For an *Improvement in Bee Hives;* William D. Miller, Red River, Clark county, Ohio, September 1.

Claim.—"What I claim as my invention, is the combination of the protector and slide, constructed as set forth, with the arrangement of hives furnished with pyramidal bottoms."

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10. For an *Improvement in Seed Planters;* G. Mottmiller, Columbus, Franklin county, Ohio, September 1.

The patentee says,—"The nature of my invention consists in constructing a machine that will drop seed at regular intervals at any distance apart required, and combining therewith shares to open the ground and cover the seed after planting; the frame of the said machine being convertible to other purposes when required."

Claim.—"What I claim as my invention, is, the combination of the double hopper and wheel, so arranged that the one wheel drops two rows, constructed and adjusted in the manner and for the purpose set forth. I also claim the frame jointed to the carriage axle, combined and arranged as set forth.

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11. For an *Improvement in the Representation of Tides and Currents;* B. F. Watts, Fort Gaines, Early county, Georgia, September 1.

Claim.—"What I claim as my invention, is the method of illustrating the phenomenon of the tides and the currents of the ocean and the heaping up of the waters on the east and reducing them on the west side of all the continents, by means of rotating wheels or troughs having the elevations of the land constructed on the plain surface, and the depressions of oceans, seas, &c., hollowed out to contain water, so that by the rotation of these the course of the tides and the currents of the ocean and heaping up of the waters, &c., will be represented."

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12. For an *Improvement in Extension Tables;* Cornelius Briggs, Roxbury, Norfolk county, Massachusetts, September 1.

Claim.—"I claim the supporting leg firmly and permanently attached to the centre joint of the extension frame work, by means of the pin passing through both plates of said joint, and driven vertically into said leg; and the combination of said leg so arranged with the semicircular grooves or channels in the two halves of the upright parts of the standard frame, the leg serving as a sufficient support for the extension part of the table, and the grooves entirely encasing the leg when the table is closed; the whole being substantially as set forth.

"I also claim the spring latches or catches, arranged as set forth, for holding the two main halves of the table together when the table is closed, and the combination with said catches of the lever bar, with its horizontal arm and vertical rod, for unfastening said catches when it is desired to extend the table, as set forth.

"I also claim the combination of a pulley, with its ratchet wheel, pall, cord, &c., arranged together as herein described with the extension frame

work, leaves, &c., and with the two main or semi-circular halves of the table, the whole being constructed, arranged, and operating substantially as set forth."

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13. For an *Improvement in Condensing Cotton Rovings, &c., for Spinning;* Jacob Graves, New Ipswich, Hillsborough county, New Hampshire, September 1.

Claim.—"What I claim as my invention, is the particular method of preparing the cotton for spinning, by subjecting the same, as it proceeds from the carding engine, to the action of a series of drawing rollers, rounding or guiding tubes, and grooved and tongued condensing rollers, in combination with each other. And I claim the combination of the series of drawing rollers, the twisting or rounding tubes, and the grooved and tongued condensing rollers, the whole being arranged and operating as set forth."

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14. For an *Improvement in Straw Cutters;* Samuel P. Ross, Lewisburg, Union county, Pennsylvania, September 1.

Claim.—"What I claim as new, is the manner in which I have combined and arranged the principal or crank shaft, the ratchet wheels on the gudgeons of the two feeding rollers, the vibrating bars, and the changeable cams working within the openings in said bars; the respective parts co-operating in producing the desired result, but only in their combination and general arrangement with each other as set forth."

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15. For an *Improvement in Cutting Veneers;* William Foster, City of New York, September 1.

The patentee says,—"The nature of my invention consists in the method of bracing and regulating the bed plate and knife, and combining therewith the apparatus for straightening the wood as it is cut."

Claim.—"What I claim as my invention, is the adjustable segment piece, in combination with the wheel and knife, in the manner set forth. I also claim, in combination with the adjustable gauge plate, the projecting concave guide attached thereto, for straightening the wood after it is cut, and, in combination therewith, the roller, in the manner and for the purposes set forth."

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16. For an *Improvement in Fountain Pens;* Nelson Bartlett, Canajoharie, Montgomery county, New York, September 9.

The patentee says,—"The nature of my invention consists in forming a fountain in the pen holder, that will supply the pen through a narrow tube at the bottom, the ink in said fountain being forced out by a piston, and the pen having a recess in the holder, within which it can be drawn, so as to make the whole apparatus portable."

Claim.—"What I claim as my invention, is the combination of the fountain, having a piston working up and down in it, with the movable pen, in the manner and for the purpose set forth."

17. For an *Improvement in Freezers for Making Artificial Ice;* Nancy M. Johnson, Philadelphia, Pennsylvania, September 9.

Claim.—"What I claim as new, is the revolving curved beater, with its vertical axis, in combination with a freezing apparatus, as set forth."

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18. For an *Improvement in Attaching Hoes to Handles;* O. Clark and W. D. Hillis, Hudson, Summit county, Ohio, September 9.

Claim.—"What we claim as our invention, is the mode of securing the fork, hoe, &c., to the ferule, by means of the shoulder or offset and wedge, and the mode of fastening the fork, hoe, &c., to the ferule, by means of the notch and wedge, in combination with the mode of fastening the ferule to the handle, by means of driving in with the ferule, after the fork, hoe, &c., is secured to the ferule, and by the shank of the fork, hoe, &c., splitting the wood or handle, or answering what might be termed the purpose of a notch wedge, secures the handle to the ferule."

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19. For an *Improvement in Distilling Alcohol;* John T. Heard, Boston, Suffolk county, Massachusetts, September 9.

Claim.—"What I claim, consists in the peculiar manner of arranging the receivers with respect to the alembic and each other: that is to say, in placing the said receivers at different altitudes in regard to each other, in combination with the particular manner of connecting them with the alembic and with each other; the whole being substantially as set forth, and for the purpose of retaining the condensed spirituous or alcoholic vapors of different degrees of strength, and preventing their return into the still. I also claim the combination, with a series of receivers arranged as set forth, of a coiled pipe and water bath or condensing apparatus, having its coils connected with the different receivers, as set forth. Also, the peculiar arrangement of the several pipes which connect the said condensing apparatus and receivers, viz., connecting the lower part of the end of the first coil of the pipe with the first or lower receiver, and that of the second coil with the second or middle receiver, and that of the last coil with the upper receiver; the whole being constructed and operating substantially as set forth."

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20. For an *Improvement in Machinery for Distributing and Setting up Type;* Frederick Rosenborg, Kingdom of Sweden, September 9; (in England, November 27, 1840.)

Claim.—"I claim the peculiar arrangement of mechanism, or combination of parts, constituting a machine for performing the operation called distributing the types, which we call arranging.

"2d, I claim the use of the grooved plates in which the types are arranged in rows or columns.

"3d, I claim the method of lowering the types, line by line, from the galley into the traveling carriage.

"4th, I claim the use of a traveling or sliding carriage, by means of

which each type is consecutively brought over the proper opening through which it descends in its groove in the grooved plate.

"5th, I claim the use of the indented rib, in combination with those parts of the sliding carriage which form a recess of the proper width to suit the thickness of the type, and into which the type is pushed, as set forth.

"6th, I claim the manner of arranging and combining the bent levers or keys, whereby the sliding carriage is stopped over the proper aperture, through which the type is to descend, and which keys at the same time act upon the pusher of the carriage, and thereby force the last type out of the line into the recess which is formed of the proper width by the indented rib acting upon a spring lever connected to the sliding carriage, and which regulates the width of the recess.

"7th, I claim the method of forcing the types along the grooves of the grooved plate, by means of the shaft and a series of cams and eccentrics, whether these cams are used by themselves or in conjunction with levers or pushers for this purpose.

"8th, I claim arranging the types in vertical columns in a rack frame, constructed as set forth, on one or both sides of a groove passage or way, into or on to which groove passage or way the several types are (as they are required) pushed out, by any convenient mechanical arrangement, from the vertical columns in which they are arranged, and then conveyed to the receiver, either by means of an endless band or chain, or by any other contrivance substantially the same in its construction and operation.

"9th, I claim the employment, in combination with the lever and tube, of an endless band or chain, on to which the types are deposited to be conveyed to the receiver, whether the said band or chain, lever, and tube, are used in combination with the other mechanical arrangements, or with any other in which it is employed for a like purpose.

"10th, I claim the manner of pushing out one single type from any column in the rack frame, by means of pushers, which are acted upon by levers in connexion with the keys, so that when any key is depressed, it may, by any mechanical contrivance, push forward the corresponding pusher, and thereby force out the type from the column on to the endless band, which runs in a longitudinal groove at the back of the column of type, by which means the type is conveyed to one end of the machine, where it is deposited in the receiver in the manner set forth.

"11th, I claim the peculiar construction and arrangement of the parts immediately connected with the receiver, into which the types are severally brought by the endless belt, these parts consisting of the carrier pulley, the roller with their appendages, and the T-formed belt-slider upon which the types are built up in lines, and the mechanism connected with the said slider.

"12th, I claim the manner of forcing or pushing the types down in the line formed on the slider, after they are brought to the receiver by the endless belt or chain. I claim this, whether it is effected by means of the small endless chain or belt, in conjunction with the pulley round which the chain passes, or by means of a small cam or other eccentric, and whether the said cam or eccentric acts directly on the type or through the medium of a lever or pusher.

"13th, I claim the construction and arrangement of the justifying stick, and also the mode of removing the line out of the receiver into the same, by means of which justifying stick the line is lowered into the galley. I also claim the manner in which the said galley is fixed in the machine.

"Lastly, I claim that part of the machine called the counting apparatus, as annexed to, and combined with, the setting-up machine, whereby the compositor is enabled to ascertain how far the line in the receiver has approached towards completion."

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21. For an *Improvement in Winnowing Machines;* James Starr, New Lisbon, Columbiana county, Ohio, September 9.

Claim.—"What I claim as my invention, is the construction and use of the rake with the vibrating screens and hopper, in the manner set forth."

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22. For an *Improvement in Ploughs;* William Black, Scott county, Illinois, September 14.

Claim.—"What I claim as my invention, is making the mould-board adjustable, in the manner and for the purpose set forth, by which means the wing is made adjustable, or susceptible of being slid down on a curved line, and made fast to any given point of the whole distance it is allowed to be moved. The purpose designed to be effected is this: that the wing of the plough may be conveniently slid down whenever the wear of the edge may require, in order that the edge may be kept level with the bottom of the bar."

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23. For an *Improvement in the Machine for Manufactaring Horse Shoes;* Henry Burden, Troy, Rensselaer county, New York, September 14.

Claim.—"What I claim as my invention, is, 1st, the manner of combining and arranging the cutters and gripping dies in the said machine, so that the former be in the same plane with the latter, thereby allowing the bar of iron to be passed directly in between them.

"2d, I claim the causing of the peripheries of the segment dies to travel faster than the sliding frame and the gripping dies, as set forth.

"3d, I claim the manner of combining the segment dies, for drawing out and distributing the metal, with those for grooving and punching it, so that the piece of metal shall be carried directly from the former to the latter, by a continued movement of the sliding frame. And for a full description of those parts of the said machine which it has not been thought necessary to present, I refer to the original patent."

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24. For an *Improvement in Lamps;* Samuel Rust, City of New York, September 14.

The patentee says,—"This improvement consists of a piece of metal as a spring or heater, about $\frac{5}{8}$ths of an inch wide, more or less, tubular or otherwise, soldered or fastened to the tube, or inside of the stopper, which spring or heater I extend downwards to the bottom part of the bowl of the lamp, or as far down as is necessary for the length of wick, and then

bend it upwards and carry it through the tube or top of the stopper, so as to run a hollow wick on to it the same as in the Argand lamp, or to put the wick in all on one side, at the pleasure of the user."

Claim.—"What I claim as my invention, is the piece of metal, spring, or heater, as applied into the tube, soldered or fastened into the tube, stopper, or lamp, and combined with the tube, stopper, or lamp, in such a way and in such manner as set forth, or in any way essentially the same, and so combined with the roller as to act in any way on the roller or wick as a spring, either in the tube or at the bottom of the short tube or socket, pressing against the roller or wick, for the purpose of receiving a thick wick or a thin wick."

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25. For an *Improvement in the Manner of Stiffening Circular Saws;* Elijah Pratt, Washington county, New York, September 14.

Claim.—"What I claim as my invention, is the method of stiffening circular saws, by making them of two separate plates fastened substantially as set forth."

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26. For an *Improvement in Apparatus for Reducing Dislocations;* Geo. O. Jarvis, Portland, Middlesex county, Connecticut, September 14.

Claim.—"What I claim as my invention, is the application of the lever to the purposes set forth, and the combination of the lever with the ratch wheel and catch, and the screw and rack, in the manner and for the purpose set forth."

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27. For an *Improvement in the Method of Ascertaining the Centre of Gravity of a Vessel, its Best Sailing Trim under Various Depths, &c.;* John Hobday, Portsmouth, Norfolk county, Virginia, September 14.

Claim.—"What I claim as my invention, is the application of the process set forth to the construction of models, lading vessels, and finding and preserving the true sailing trim of vessels at any draft of water; also finding the true centre of displacement or centre of gravity."

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28. For an *Improvement in Steam Boiler Furnaces;* Gideon Shyock and Samuel Underwood, Louisville, Kentucky, September 14.

Claim.—"What we claim as our invention, is the using, in the manner set forth, fire brick (or any other material which is a non-conductor of heat) in the construction of furnaces for the evaporation or distillation of liquids, and under and about the boilers, and in the flues of boilers, for steam engines."

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29. For an *Improvement in Ploughs;* J. S. Eastman, assignee of George Cleasy, Baltimore, Maryland, September 14.

The patentee says,—"The nature of my invention consists in forming a self-sharpening point, and inserting it in the landside, the front lower edge of which is formed by the share, both of them being fastened by the same bolt."

Claim.—"What I claim as my invention, is the combination of the point

and mould-board, constructed and arranged in the manner set forth, the share and mould forming the socket in which the point is held."

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30. For an *Improvement in the Machine for Washing Gold;* Henry Bourne, Elberton, Elbert county, Georgia, September 14.

The patentee says,—"The nature of my invention consists in cutting in the screen which covers the leading trough, transverse slits, at certain intervals between which the screen is perforated with holes in the usual way, and in furnishing the bowl with a runner composed of horizontal cross arms, from which project downwards vertical teeth, for stirring the gold, sand, &c."

Claim.—"What I claim as my invention, is the employment of the runner, constructed as set forth, in combination with the bowl, constructed and arranged as set forth. I also claim constructing the screen in the manner set forth, so that any particles of gold that pass down between the holes shall be caught at the slits which are formed for that purpose."

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31. For an *Improvement in the Machine for Cleaning and Polishing Knives and Forks;* Martin N. Armstrong, City of New York, September 14.

Claim.—"What I claim as my invention, is attaching the brushes to separate arbers, (thus dispensing with a shaft,) one of said arbers being provided with a set screw, or other analogous device, so that the brushes can be brought nearer to, or set further from, each other, for the purpose and in the manner set forth."

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32. For an *Improvement in Cotton and Wool Cleaners;* Theo. Ely, City of New York, September 14.

Claim.—"I claim as my invention, 1st, the combination and arrangement of the several parts, to wit: the endless cloth, feeding roller, main cylinder, having movable combs or teeth; the apparatus for removing the burrs or seeds, consisting of the plates with their appendages; the drawing roller and cleaning apparatus; together with the gearing, eccentric plates, and grooves, necessary to give the desired motions to the parts, forming a machine for removing the burrs from wool and seeds from cotton. And this I claim, whether the several parts are placed relatively to each other, or in any other manner substantially the same.

"2d, I claim the movable combs, whether actuated as set forth, or in any other way which will give them an alternate motion in and out of the cylinder.

"3d, I claim the apparatus for removing the burrs or seeds, consisting of the fixed plate and the sleding plate, whether the latter be attached as set forth, or by any other means which will give a like motion."

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33. For an *Improvement in Portable Screw Presses;* Alexander Hallam, New Orleans, Louisiana, September 14.

The patentee says,—"The nature of my invention consists in connecting with a screw and cross-head, four or more, or less, can-hooks, by means

of rods or chains, so that the screw may be made to act on the upper head of the cask by applying the can-hooks to the bottom chine, which can be done without moving it from the skids on which it rests in the warehouse."

Claim.—"What I claim as my invention, is the combination of can-hooks with a screw and cross-head, constructed and arranged as set forth."

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34. For an *Improvement in Water Wheels;* Daniel Stearns, Rome, Oneida county, New York, September 14.

Claim.—"What I claim as my invention, is the wheel with three or more buckets, each presenting three inclined sides, constructed and arranged as set forth, to the action of the water, the sectional shape of said buckets being either square, oblong, oval, elliptical, or otherwise, so as that the principle remains the same."

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35. For an *Improvement in Crystalizing Salt;* Beriah Douglass, Albany, New York, September 23.

The patentee says,—"The nature of my invention consists in the formation and arrangement of furnaces and flues in a boiler, by which salt is more perfectly and profitably made, and steam is generated for propelling and other purposes at less expense than by any other means."

Claim.—"What I claim as my invention, is the manner of precipitating and crystalizing salt in the briny water below the heating furnaces and flues, by which means the salt is better made than by any mode of boiling in kettles or troughs over the fire, as is usually done. I also claim the mode of arranging furnaces and flues open on both sides of the boiler, for the purposes mentioned, the flues being wide and thin, standing vertical, and thus combined with the furnaces and plank boiler."

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36. For an *Improvement in Cooking Stoves;* Samuel B. Sexton, Baltimore, Maryland, September 23.

The patentee says,—"This stove resembles, exteriorly, my patented stove. The improvements are principally in the addition of the rotary top, side flues, central flue or pipe, and side pipe to be used in the summer. Also, in the manner of making the rotary oven in segments."

Claim.—"What I claim as my invention, is, 1st, the combination of the rotary top with the revolving oven, in the manner set forth. 2d, The arrangement of the central vertical pipe, over which the rotary top turns, and through which the draught is conducted, as set forth. 3d, The arrangement of the horizontal pipe as set forth."

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37. For an *Improvement in the Method of Coupling the Forward Axletree of a Four-Wheeled Carriage with the Reach and Head Block or Rocker;* Alex. H. Hart, Chagrin Falls, Cuyahoga county, Ohio, September 23.

The patentee says,—"The nature of my invention consists in an improved method of uniting the lower or rotating plate of a compound coupling joint with the axletree, by means of a hinge joint, so constructed as to give strength and durability to the whole, as well as to allow the

axletree both a horizontal and a limited vertical motion; my invention being an improvement upon the method of uniting these patented to Alfred Osgood."

Claim.—"What I claim as my invention, is the method in which I construct the joint which unites these two: that is to say, I claim the semicircular knuckle with its projection and gudgeons, and the concave on the lower plate, in combination with the bed and the side plates, that receive the gudgeons and projections for the concaves to rest on, as set forth."

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38. For an *Improvement in the Machine for Knitting Stockings;* Henry Burt, Boston, Suffolk county, Massachusetts, September 23.

Claim.—"What I claim as my invention, is the mechanism for narrowing and widening, consisting of the movable stops, combined with a rack of teeth or other suitable contrivance, formed upon the shifting bar, and acting upon the carriage of the yarn-guide, as set forth; or of a pattern cylinder, combined with the shifting bar and the carriage, and operating therewith as set forth. Also the stop rack, combined with the tube of the yarn-guide, and actuated in the manner set forth. Also the mechanism which effects the changes of the clutches, the same consisting of the shifting bar, the arber, having a circular depression and radial recesses in its heads and levers, and other parts connected to the same, and connecting the same with the clutches; the whole being arranged and operating as set forth. Also the stationary roller, and the projections and their interweaving curve, (formed upon the shifting bar,) in combination with the spring of the sliding toggle bars; and also in combination with the rail and its depressions; the whole being for the object set forth. Also the cloth bar, arranged and operating as set forth. Also the particular method by which the depressing bar is carried and forced down upon the pointed ends of the needles, in order to press them into the grooves in their shanks, viz., by a combination of bent levers and arms, the same being actuated substantially as set forth. Also the manner of raising the stitch hooks, viz., by an elevating plate through which they extend, and which is combined with and operates them, as set forth. Also the method of clearing the point or lower end of the yarn-guide from the depressing bar, when the latter descends upon the needles, viz., by a ledge in the latter, in combination with a roller applied to the T-piece of the yarn-guide, the whole being as set forth. Also the method of clearing the point of the yarn-guide from the stitch hooks when the roll passes by the thread-guide, or as soon as the lateral motion of the thread-guide is stopped, viz., by the beveled edge plate, (applied to the cross piece,) in combination with the screw, or other contrivance of similar character, projecting from the T-piece of the yarn-guide. Also the mode of regulating or adjusting the distance to which the points of the needles shall retreat, viz., by the movable curved pieces, making part of the cam, the same being arranged and operating substantially as set forth. Also the combination with the mechanism, (the arm and shaft supported by pivots,) which sustains and carries the roller of the depressing and elevating bar, raised and depressed by machinery, substantially as set forth."

39. For an *Improvement in the Machine for Immersing Carriage Wheels in Water after putting on the Hoop or Tire;* James Morris, Bloomfield, Essex county, New Jersey, September 23.

Claim.—"What I claim as my invention, is placing the frame, with the wheel thereon, in a box or vessel filled with water, and lowering it so as to immerse the wheel in the water, as set forth, using for that purpose any of the methods described, or any other mechanical contrivance which will produce the same effect."

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40. For an *Improvement in Tuyeres;* Lewis E. Clow, Montpelier, Washington county, Vermont, September 23.

Claim.—"What I claim as my invention, is the combination of the revolving tuyere cap, constructed as described, with the central under-blast, arranged and constructed as described."

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41. For an *Improvement in Railroad Car Springs;* James Millholland, Baltimore, Maryland, September 23.

Claim.—"What I claim as my invention, is the combining with the cars of a spring on each side, formed of wood or of metal, extending along over all the bearings of the axles, having bearing blocks between each of the wheels, and being received within pockets at their ends as set forth, the whole being combined and operating substantially as set forth."

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42. For an *Improvement in Water Wheels;* Abraham Baker, Dalton, Wayne county, Ohio, September 23.

The patentee says,—"The nature of my invention consists in forming an inclined wheel with movable buckets in the rim so as to receive the water at its highest point and discharge it at its lowest, by which I am enabled to use a wheel of a much larger diameter in a given fall than can be done with an overshot wheel."

Claim.—"What I claim as my invention, is the combination of the buckets constructed and operated as described, in the manner and for the purpose substantially as described."

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43. For an *Improvement in the Apparatus for Closing Doors, Gates, &c.;* Gardner Barton, Jr., Waterford, Saratoga county, New York, September 23.

Claim.—"What I claim as my invention, is the combination and arrangement of the wheels, the lever, weight, arm, and door or gate, operating in the manner and for the purposes set forth."

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44. For an *Improvement in Making Paper Buttons;* Elisha M. Pomeroy, Wallingford, New Haven county, Connecticut, September 23.

The patentee says,—"The nature of my improvements consists in preparing the button to receive a smooth coat of varnish or the finishing

lustre, and also in securing that lustre to the button in the highest degree and by the most economical method."

Claim.—"What I claim as my invention as a new and useful improvement, is the process by which the button, after its roughness is removed, is prepared to receive a smooth coat of varnish, and which consists in revolving the buttons in a cylinder with so much japan varnish, or some of the fixed oils, as they will receive without adhering to each other, and until they present a dry and polished surface, after which they are baked.

"And I also claim the mode of giving to the button when prepared by the last named process a smooth coat of varnish or the finishing lustre, which said mode consists in revolving the buttons in a cylinder with so much japan or other varnish as they will receive upon their surface, and until all have received a light coating of the varnish, at which time, and before they have lost their lustre, they are again removed to the kiln and baked until dry, when they are finished and prepared for packing."

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45. For an *Improvement in Vegetable Elixir for the Cure of Bronchitis, &c.;* Peter Faulkner, Rockville, Crawford county, Pennsylvania, September 23.

The patentee says,—"Take two pounds of sweet apple tree bark, dried, and boil the same in six gallons of soft watar till reduced to one gallon, then strain it. Add two and an half ounces of tartarized antimony dissolved in a quart of warm water; four ounces of pulverized jalap; half pound of nitrate of pottass; one pint spirits of camphor, and a half pound of loaf sugar; the whole to be well mixed together and bottled for use."

Claim.—"What I claim as my discovery, is the before described medicine for curing the bronchitis, sore throat, asthma, croup, whooping cough, and dyspepsia."

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46. For an *Improvement in Grist Mills;* Josiah Platt, Weston, Fairfield county, Connecticut, September 28.

Claim.—"What I claim as my invention, is the manner of suspending the runner to the screw by means of the connecting bolt, shoulders, and screw, and of raising and lowering the runner, as set forth."

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47. For an *Improvement in Medicated Vapour Baths;* Morris Mattison, Boston, Suffolk county, Massachusetts, September 28.

Claim.—"What I claim as my invention, is the particular method of constructing and rendering portable the frame of the bathing tent, by forming it of a folding bottom or box in combination with jointed posts and top rails, or other similar contrivances, the whole as set forth. Also, the mode of sustaining the top and preventing in a great degree the destruction of a wick of a spirit lamp by the flame, and also permitting the flame to have access to a great extent of the vertical surface of the wick, viz: by inserting within the said upper part a metallic ring supported on the top of the elevating tube of the wick, the whole being as set forth."

48. For an *Improvement in Endless Chain Paddles for Propelling Vessels;* Beriah Douglas, Albany, New York, September 28.

Claim.—"I am aware that endless chain paddles have been so arranged as to cause the paddles to leave the water on an inclined plane to avoid the usual wasting of power, this being effected by two drums of different diameters; and therefore it will be understood that I do not claim this as my invention; but as I am enabled by my arrangement to cause the paddles to enter as well as leave the water on an inclined plane, I claim as my invention the method of effecting this by having the chains pass around three or more drums, the inner drum or drums being ranged lower than the end drums or wheels, in the manner set forth."

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49. For an *Improvement in Tailors' Measures;* George Eckler and S. X. Ball, Flint Creek, Ontario county, New York, September 28.

The patentees say,—"The nature of our invention consists in forming a variable pattern that can be put on and fitted to the person, after which it can be taken apart and laid upon the cloth and a garment cut from it."

Claim.—"What we claim as our invention, is the adjustable pattern for cutting garments by, constructed, combined, and arranged as set forth."

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50. For an *Improvement in Cross Sawing Timber, &c.;* Thos. J. Marsh, Liberty, Union county, Indiana, September 28.

Claim.—"What I claim as my invention, is the manner of producing the oblique up and down stroke to the saw for clearing itself from the sawdust or chips, as set forth, by means of the combination of the vibrating lever and sliding carriage, one end of the lever being connected to the arm of the saw frame, and the other end to the pitman rod of the sliding frame and crank shaft."

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51. For an *Improvement in Cotton and Hay Presses;* William Bullock, assignee in part to Charles Bullet, Jersey City, Hudson county, New York, September 28.

The patentee says,—"The nature of my invention consists in procuring an immense power for pressing by the combined mechanical arrangement of the compound levers and toggle joint, in combination with the ordinary block and tackle, which I term my compound lever and toggle joint presses."

Claim.—"What I claim as my invention, is the method of constructing a press; that is to say, a press in which is operated a single toggle joint, by means of an arm which is extended beyond the movable fulcrum of the joint, to the end of which arm the power is applied so as to act in a direction at right angles to the line in which the follower moves; the application of the power being made through the medium of pullies or other analagous device, substantially in the manner set forth."

52. For an *Improvement in Abdominal Supporters;* J. White, S. N. Marsh, and H. Smith, Canajoharie, Montgomery county, New York, September 28.

Claim.—"What we claim as new, is the manner of forming the abdominal pad of three plates of metal, connected together by means of springs, as set forth. We also claim the combining of the perineal with the abdominal pad, under an arrangement of the respective parts, such as is described. We claim likewise the combining of an adjustable pessary with the abdominal pad, substantially as set forth."

List of American Patents which issued in the month of October, 1843, *with Exemplifications by* CHARLES M. KELLER, *late Chief Examiner of Patents, in the U. S. Patent Office.*

1. For an *Improvement in Machines for Mincing Whale Blubber;* George W. Sowle and William Carsley, New Bedford, Bristol county, Massachusetts, October 6.

The patentee says,—The nature of our invention consists in so connecting a knife with a wheel and axle, as that by turning a crank the blubber or other matter shall be cut into uniform pieces of convenient thickness to be tried or boiled out in the kettle."

Claim.—"What we claim as our invention, is the method of arranging the knife; that is to say, attaching the knife directly to the crank and supporting its ends by means of the two jointed arms or cranks."

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2. For an *Improvement in Ships' Windlasses;* Artemus Hammond and William Adams, assignees of A. Hammond, Boston, Suffolk county, Massachusetts, October 6.

Claim.—"I claim the method of relieving the crank shaft from the effects of a torsion strain, viz: by arranging a supplementary pall case with its palls and ratchet wheel, at each end of the shaft and windlass barrel so that at each elevation or depression of the brakes each end of the shaft or windlass shall be actuated or turned in one direction; the whole being substantially as set forth. Also, extending the rear plate of each of the pall cases into the body of the case or beyond the flanch of the circular plate, and forming a curved groove in said plate for the flanch to rest and move in, by which arrangement the access of water into the interior of the arm of the pall case is prevented; the whole being constructed and arranged as set forth."

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3. For an *Improvement in Breaking and Screening Coal;* Joseph Battin, Philadelphia, Pennsylvania, October 6.

Claim.—"What I claim as my invention, is the manner in which I have arranged and combined with each other the breaking rollers and the screen, the respective parts being formed and operating substantially as set forth."

4. For an *Improvement in Smut and Garlic Machines;* William Delany, Cornwall, Grange county, New York, October 6.

Claim.—"What I claim as my invention, is the arrangement of the perforated iron case, metallic beaters, and brushes, in combination with the inclined revolving case, as set forth."

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5. For an *Improvement in Fanning Mills;* David A. Fulk and L. B. McLain, New Lisbon, Columbiana county, Ohio, October 6.

The patentees say,—"The nature of our invention consists in connecting a flexible conductor to the sides of the shoe where the air enters so that none of the wind from the fan shall escape without passing through or under the shoe; the lower sieve or screen at the end net the fan can be elevated or depressed so as to alter its inclination as the work requires. A shaking screen is also attached below the fan in front."

Claim.—"What we claim as our invention, is, 1st, the employment of a flexible conductor for guiding the air into and between the screens in the shoe, constructed and arranged substantially as set forth. 2d. We claim the movable screen in combination with the above, one end of which can be raised or lowered, as set forth. 3d. We claim in combination with the above the additional screen and shaking shoe combined with the fan, in the manner and for the purpose set forth."

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6. For an *Improvement in the Mode of forming Moulds for Casting Cannon Balls or Shot, Bombshells, &c.;* Abial Elliot, Philadelphia, Pennsylvania, October 6.

Claim.—"What I claim as my invention, is forming moulds for casting cannon balls and other articles by moulding the sand, or other materials, in followers having a similar form to the articles to be cast, but of greater dimensions, by which an equal thickness of sand (or other material) can be obtained, and to insure this equal thickness and to facilitate the operation. I also claim in combination with the above claimed method of forming moulds, the employment of a sliding pattern working through a bed plate, in the manner set forth."

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7. For an *Improvement in the Mode of Destroying the Cocoa Grass;* H. B. Kenner, New Orleans, Louisiana, October 6.

Claim.—"What I claim as my discovery, is the use or application of the palma christi nuts, the hemp, and the Jamestown weeds seeds, on or to lands for the purpose of destroying the cocoa grass therein."

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8. For an *Improvement in Bougies for Strictures;* Robert J. Dodd, Philadelphia, Pennsylvania, October 6.

The patentee says,—"The object of my improvement is to guide the bougie in inserting the same into the urethra for the purpose of removing a stricture and to prevent the laceration of the urethra in inserting the bougie, and also to guide the cutting instrument used in removing the stricture

and to prevent its point from passing out of the urethra on one side in the operation."

Claim.—"I claim as my invention the said instrument, consisting of the dilator and guiding rod merely, or consisting of the dilator, guiding rod, knife, and knife bearer."

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9. For an *Improvement in the Machine for Sweeping Streets, &c.;* Thos. Mussey, New London, New London county, Connecticut, October 12.

Claim.—"What I claim as my invention is, 1st, the securing rod and the direction in combination with the cart, the eyebolt in the axle of the cart, and the hook on the neap of the machine, to unite and separate the machine and cart with the least possible delay, and to secure them fast together when they are united as described, the cart giving motion to the machine and receiving the dirt as fast as the machine collects it.

"I claim in combination the peculiar manner of constructing the brushes, as set forth, with the sheet iron end pieces, slotes and screw bolts attached, by which combination the brushes are easily extended until they are worn out.

"3d. I claim the combination of the cylindrical apron, the end pieces of wood attached, with the sliding castors, the adjusting levers and screws, the brush frame with its iron plates resting on the balance rocker; also the balance rocker itself; which combination has the effect of sustaining the brushes, holding the dirt to them, and adjusting them to the inequalities of the ground.

"4th. I also claim the ungearing rollers in combination with the springs, clutch boxes on the hubs, the windlass and the ropes or chains connecting the ungearing rollers with the forward end of the brush frame, by which combination the machine is put out of gear and the brush raised, and in this manner rendered capable of being moved about like a wagon."

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10. For an *Improvement in Washing Machines;* Jesse E. Rich, Penfield, Marion county, New York, October 12.

Claim.—"What I claim as my invention, is the combination of the adjustable spring board with the beater and crank shaft, in the manner and for the purposes set forth."

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11. For an *Improvement in Instruments for Regulating Temperature;* David B. Van Tuyl, City of Dayton, Montgomery county, Ohio, October 12.

Claim.—"What I claim as my invention, is the mode set forth of regulating the temperature of apartments, &c.; that is to say, operating valves, &c., for the admission or exclusion of heat, &c., by means of the instrument which I denominate the eucrator, consisting of a hollow cylinder mounted upon an axes and furnished with a hollow rim, the lower half of which contains water; said rim being divided into two chambers, one

of which communicates with the air in the hollow cylinder, and the other opening to the external air, all as set forth. Also, in combination with the above, the sliding balance for the purpose of compensating for barometric changes."

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12. For an *Improvement in Smut Machines;* Edward Howard, Fredonia, Chautauque county, New York, October 12.

Claim.—"What I claim as my invention, is the construction of the revolving frame or bearers with the inner and outer stationary cylinders, constructed and operating as set forth."

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13. For an *Improvement in Shower Baths;* Stephen Bates, Dedham, Norfolk county, Massachusetts, October 12.

The patentee says,—"My improvement consists in suspending the upper or showering basin and parts connected with the same, so that they may be lowered to any required depth to enable a person to pour in the water by raising it a little distance from the floor, and after it is so poured in, the the said basin, &c., may be raised to its original position, or to any height from which it may be desired to have the water fall"

Claim.—"What I claim as my invention, is making or arranging the showering apparatus and turning bucket so that they may be raised or depressed at pleasure, in the manner set forth."

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14. For an *Improvement in Meat Cutters;* Harvey H. Evarts, Mount Morris, Livingston county, New York, October 12.

Claim.—"What I claim as my invention, is the manner in which I have arranged the knives projecting out from the revolving disks and so as to pass each other under the hoppers; and also the arrangement of the several hoppers, as set forth."

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15. For an *Improvement in Straw Cutters;* James Sanford, Redding, Fairfield county, Connecticut, October 12.

Claim.—"What I claim as my invention, is the method of cutting and bruising straw and hay by means of two cylinders, one having blades or knives and the other strips set in them longitudinally and revolving into each other, so that each strip in one passes near by the corresponding edge in the other and presses the straw or hay upon the edge, in the manner set forth.

"I also claim the method of entering the blades and strips into the cogs, by means of which I am enabled to use thinner blades and strips than I could otherwise do, to support them in their places in the most effectual manner without allowing them to interfere with each other and to make the cogs answer a double purpose, whereby both the weight and expense of the machine is diminished."

16. For an *Improvement in the Method of Feeding Nail and Tack Plates, &c., into Machines for Cutting Nails and Tacks, &c.;* James Thompson and Halsey Rogers, assignees of Walter Hunt, City of New York, October 12.

Claim.—"What I claim as my invention is, 1st, the plyers or feeding tongs, constructed as set forth, in connexion with the spring and the feeding rod as forming a new and useful instrument for the purposes set forth. 2d. I claim the plan of griping and disengaging the feeding rod between the rollers by means of the combined arrangement of the crank or lever, the camb shaft, the screw camb, the lever, and the bracket, constructed and combined in the manner set forth, or similar thereto."

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17. For an *Improvement in Mop Irons;* Salmon Johnson, Lee, Oneida county, New York, October 18.

The patentee says,—"My invention consists in the application of a spiral spring of iron or brass wire, or other suitable material for a spiral spring, to force and hold together the two parts of a mop iron or frame which holds the yarn of which the mop is made, and constructed in the manner set forth. I make no claim for any portion of the invention excepting the constructing the mop irons in the manner set forth; that is to say, operating the upper iron or movable holder by means of the spiral spring combined therewith, in the manner set forth."

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18. For an *Improvement in Cooking Stoves;* Henry T. Butler, assignee of Laban Eddy, Taunton, Bristol county, Connecticut, October 18.

Claim.—"I claim the improvement in the Hathaway cooking stove, as set forth; that is to say, I claim the peculiar form or arrangement of the flue which conducts the heat and smoke in contact with the back and bottom plates of the oven; that is to say, the combination of the vertical undivided flue space in rear of the oven, through which the smoke descends with the two lateral horizontal flue spaces and central flue underneath the said oven and connecting with the discharge flue; the whole being substantially as set forth."

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19. For an *Improvement in the Door Lock or Latch;* William Hall, Chelsea, Suffolk county, Massachusetts, October 18.

Claim.—"What I claim as my invention, is the mode of constructing the parts which operate the latch bolt and knobs, or by which the said latch and knobs are actuated by means of a single spring, as set forth, viz: the combination with the latch and the slide or fork (of the tumbler) of the lever and spring; the said lever turning on a fulcrum or pin at its upper end and resting, when thrown forward, against a shoulder of the fork or slide of the tumbler, and being jointed or otherwise properly connected to the latch bolt, and having the spring which throws it forward applied to it at a point between its fulcrum and the latch bolt; the whole being arranged and operating substantially as set forth."

20. For an *Improvement in Looms for Working any Number of Heddles;* Gavin McCrae, Baltimore, Maryland, October 18.

The patentee says,—"The nature of my invention consists in the apparatus by which I can raise any number of heddles in any pattern by means of one treadle."

Claim.—"What I claim as my invention, is the combination of the endless chain of lays having pins projecting therefrom in the manner set forth, with the needles; and also in combination with the above, the lever-acting catch bar for raising an even shed, in the manner set forth."

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21. For an *Improvement in Water Wheels;* Amasa B. Beckwith, Bath, Steuben county, New York, October 20.

Claim.—"What I claim as my invention, is the peculiar arrangement and construction of the curvilinear or screw sharpened buckets in combination with the bell shaped hub segment buckets and scolloped and flaring rims, as set forth."

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22. For an *Improvement in Ploughs;* William and Matthew C. Walker, Washingtonville, Columbia county, Pennsylvania, October 20.

Claim.—"What we claim as our invention is, 1st, casting the mould-board with the wing and mortise behind it for the admission of the hook of the land-bar, in the manner and for the purpose set forth; and with the recess in the landside of the mould-board to admit the forward part of the land, made of a corresponding shape, as set forth; and in combination with the above, the tongue to fit into a corresponding groove or notch, in the manner and for the purpose set forth. 2d. The manner of forming the land-bar with a hook on its forward end to hook or lock into the notch in the mould-board, as set forth."

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23. For an *Improvement in the Combination Safety Lock for Doors, &c.;* Linus Yale and Chas. Wilson, Springfield, Hampden county, Massachusetts, October 20.

Claim.—"What we claim as our invention is combining a revolving and sliding spindle and arm with one or more rotating disks notched in their peripheries or flanches, in the manner and for the purpose set forth, by which the spindle is made to perform the triple purpose of turning the disks, throwing the bolt, and closing the aperture in the case, the bolt being prevented from being pressed back simultaneously with the turning of the disks; and the introduction of false keys or other implements to the interior of the lock is also prevented.

"And we also claim the combination of the rotating and sliding spindle in combination with two rotating disks having the same centre of rotation, so that by the sliding and turning of the spindle it can be made to act on the two disks alternately, as set forth."

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24. For an *Improvement in Cooking Stoves;* Benjamin T. Roney, Milton, Northumberland county, Pennsylvania, October 25.

The patentee says,—"The nature of my invention consists in placing the

draught in the centre of the sides of the stove under the fire chamber, which fills the whole of the upper part of the stove; there being four diving flues, one at each corner, the draught to which is regulated by dampers, as is the centre draught to either end of the stove."

Claim.—"What I claim as my invention is, 1st, the centre draught arranged and combined with the fire chamber substantially in the manner set forth, and having a shifting damper so as to regulate the admission of air, as set forth. I also claim the employment of the diving flues, constructed, arranged and combined with the centre draught, in the manner set forth."

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25. For *an Improvement in Cooking Stoves;* Alpheus Cooper, Danville, Columbia county, Pennsylvania, October 25.

The patentee says,—"The nature of my invention consists in adapting the stove to burning wood or coal, and with the latter to combine a hot-air chamber to convey heat to the oven."

Claim.—"What I claim as my invention, is the formation of a hot-air chamber by means of the cylindroid and cap plate in the fire chamber of a wood stove, thus changing it into a coal stove and at the same time applying heat to the oven, in the manner and for the purpose set forth."

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26. For an *Improvement in Elastic Stops for Checking the Force or Momentum of Water in Pipes;* Horatio Allen, City of New York, October 25.

The patentee says,—"The combination which I have invented consists in placing in contact with the water in water pipes containing water under pressure, an elastic material within which, or on the opposite side of which, is a volume of air or other elastic body under the same pressure with the pressure of the water."

Claim.—"What I claim as my invention, is the combination set forth whereby an elastic enclosing material or an elastic separating material is interposed between the air or other elastic body and the water, whose momentum is to be provided for; and also the combination of an elastic sheet or tube with the pipe containing water under pressure, whereby the elastic material forms a part of the enclosure of the water, and by its elasticity a yielding substance is provided for the momentum of the water."

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27. For an *Improvement in the Method of Introducing Wire into Metallic Pipes;* S. F. B. Morse, City of New York, October 25.

The patentee says,—"The nature of my invention consists in substituting a hollow mandril for the solid mandril used in making metallic pipes, which hollow mandril I use for the purpose of introducing with facility wires of considerable lengths within said pipe."

Claim.—"What I claim as my invention, is the method of introducing wires in hollow pipes whilst making the same by introducing the wires through a hollow mandril on which the pipe is made substantially in the manner set forth."

28. For an *Improvement in Ice Cutters and Markers;* Nath'l J. Wyeth, Cambridge, Middlesex county, Massachusetts, October 25.

Claim.—"What I claim as my invention, is the use or combination of bearing runners with the back bar or planks to which the cutters or chisels are fastened, (however the said parts may be connected,) by which combination a cutter or marker may be moved about from place to place with facility.

"I also claim the connecting the said runners with the back bar or parts to which the cutters are attached by means of the turning lever bars, arranged as set forth, which arrangement permits the cutters to be moved up and down between the runners at pleasure, and serves peculiarly to preserve the perpendicularity of the cutters, and also to move all parts of the cutting apparatus equally: and furthermore, I claim the combination of a rack bar (straight or crooked) with the movable guiding handles and confining pin passing through the same, and with the back bar aforesaid, for the purpose of confining the cutting apparatus in any desired position; the whole arrangement operating substantially as set forth."

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29. For an *Improvement in Globes;* Gilbert Vale, City of New York, October 28.

Claim.—"What I claim as my invention, is the movable horizon attached to the meridian and moving as the figure representing the traveler moves. I claim also the application of the celestial globe in sections, rendered transparent to the sphere, as explained. I also claim the application of this instrumant as a planetarium by the introduction of wires representing the orbits of the planets and showing their modes and inclinations."

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30. For an *Improvement in Connecting Stop-Cocks for Hydraulic Presses;* Charles Wilson, City of New York, October 28.

Claim.—"What I claim as my invention, is the combination of two stop-cocks with the bramah or other hydraulic presses when two cylinders or presses are to be used, in the manner and by the mechanical means substantially as set forth; the said cocks being so connected with such presses, and with each other, as that one of them will be opened into one cylinder at the same time and with the same motion that the other is closed upon the other cylinder."

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31. For an *Improvement in Wheel Ploughs;* Thomas D. Burrell, Geneva, Ontario county, New York, October 28.

The patentee says,—"The nature of invention consists in removing the sole of the landside and placing an inclined wheel, denominated a shell wheel, between the landside and the mould board, with its face in a line with the cut of the coulter; the landside curves up from the point of the share and backward to the junction of the handle and beam. The beam is halved on the landside on the outside, and the handle is affixed to the side of it, the whole being secured by a screw bolt passing through them

this forms a secure joint without tenon and mortise, and without materially weakening the beam or handle."

Claim.—"What I claim as my invention, is the shell wheel, constructed substantially as set forth, combined with the plough in the manner and for the purpose set forth. I also claim the guard or scraper in combination with the shell wheel. I also claim the mode of connecting the beam, landside and handle."

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32. For an *Improvement in Washing Machines;* James Hutchinson, Martinsburg, Berkley county, Virginia, October 28.

The patentee says,—"The nature of my invention consists in combining what I denominate a cylinder of rollers with an elastic movable concave, the whole being arranged and placed above a furnace and boiler."

Claim.—"What I claim as my invention is, the combination of the flexible concave and cylinder of rollers, constructed and arranged substantially as set forth."

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33. For an *Improvement in the Endless Chain Horse Power;* Salmon Richards, East Poultney, Rutland county, Vermont, October 28.

Claim.—"What I claim as my improvement, is the manner of forming and connecting together the segments which constitute the horizontal floor, said segments each carrying one pair of bearing wheels, and the whole being connected together by hinge or rule joints and being furnished with ledges to support the contiguous segment; the whole being formed substantially in the manner set forth."

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34. For an *Improvement in Cars and Receiving Platforms for Removing Blocks of Ice;* Nathaniel J. Wyeth, Cambridge, Middlesex county, Massachusetts, October 28.

Claim.—"I claim the combination (of the front and rear end of a car) of a sliding plank, suspended from a strip of cloth of suitable width, and connected to a turning shaft in the upper part of the car, so as to be wound or unwound upon or from the same, with a hinged plank or door at the bottom of the car opening outwards, and having projecting slides or bars fastened to the upper or inside of the same; said combination being arranged and operating substantially as set forth, to open or close the end of the car at pleasure.

"I also claim the supporting the transverse lever bars of the cars and receiving platforms upon the turning cams or eccentrics connected together by an arm, so that by turning one of said cams, by means of a lever or otherwise, the positions of the lever bars may be varied in the manner and for the purposes set forth; the arrangement and operation being substantially as set forth.

"I claim the arrangement of a metallic bar or rail vertically or edgewise, in or on the transverse lever bars, so that when the lever bars are raised to the elevated horizontal position mentioned, the said rails shall hold the blocks of ice or prevent any essential movement of them when the cars are suddenly started or stopped, the arrangement and operation being substantially as set forth."

List of American Patents which issued in the month of November, 1843, *with Exemplifications, by* CHARLES M. KELLER, *late Chief Examiner of Patents in the U. S. Patent Office.*

1. For an *Improvement in Casting Printing Type;* David Bruce, Jr., Williamsburg, Kings county, Long Island, New York, November 6.

Claim.—"What I claim as my invention is, 1st, the male plate constructed with a nipple protruding beyond its back surface and springs attached to the plate, arranged and operating substantially as set forth.

"2d. I claim the method of opening and closing the mould and tilting the matrix by the combination and arrangement of the compound vibrating arm and lever, arms and spring; said lever having a simultaneous vibrating movement on an axis on the vibrating arm in the manner and for the purpose set forth; and this combination and arrangement I claim whether effected in the manner set forth, or in any other manner substantially the same.

"3d. I claim the adjustable mould block combined with the vibrating arm for the purpose set forth,

"4th. I claim the combination of the adjustable frame with the lower adjustable mould block in the manner and for the purpose set forth.

"5th. I claim the circular collar perforated with a rectangular opening in the centre to admit the rectangular shaft or stem of the upper mould block, with the hinge piece and adjustable frame, in the manner and for the purpose set forth.

"6th. I claim the manner of supplying the melted metal to the mould by a horizontally and vertically perforated piston, placed below the level of the bottom of the metal pot, arranged and operated in the manner set forth, by which the metal is forced into the mould at a lower temperature than heretofore effected, and the metal remaining in the mouth of the female plate (after the type has been cast) is drawn back into the seat or chamber of the piston as the piston rises, by which the mouth of the female plate is prevented from being stopped or choked by congealed metal.

"7th. I claim the combined arrangement of these several parts, namely, the lever, cam, spring, rod, and vibrating beam, by which the piston is operated as possessing advantages as set forth.

"8th. I claim placing the vibrating mould arm between the furnace and the propelling or cam shaft, as set forth."

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2. For an *Improvement in Bee Hives;* Joseph Miller, Lexington, Stark county, Ohio, November 6.

Claim.—"What I claim as my invention, is the arrangement of the cells so that they are suspended from their top and can be removed or replaced from the top of the hive by sliding them in or out vertically, the cells being so arranged and formed at the bottom that they shall present two inclined surfaces as set forth; and I claim in combination with the above, the arrangement of the board so as to have an entire clear space between them and the bottom of the cells."

3. For an *Improvement in the Box Trap;* Jacob Stroop and John Esteale, Allegheny, Pennsylvania, November 6.

Claim.—"What we claim as our invention, is the turnstile operated substantially as described in combination with the sets of bars, H, and also with the sets of bars W, as set forth. We further claim the turnstile in combination with the treadle, and also with the box trap, for the purpose and in the manner set forth."

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4. For an *Improvement in Machinery for Elevating Blocks of Ice from the Surface of the Water to a Higher Level;* Nathaniel J. Wyeth, Cambridge, Middlesex county, Massachusetts, November 6.

Claim.—"I claim the use, formation or arrangement of a snow track groove or box between the horse track or path and the guide rails of the ascending and descending inclined planes for the purpose of facilitating the movements of the sled up and down said planes. I also claim the combination of an ice sled formed in sections, with the groove or box aforesaid, and the horizontal rails hereinbefore described, for the purpose of raising ice from one level to a higher one, the whole being arranged and operating substantially as set forth."

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5. For an *Improvement in Making Coopers' Hoops out of Split Timber;* James McWhorter, Blooming Grove, Franklin county, Indiana, November 6.

Claim.—"What I claim as my invention, is the manner of arranging and combining the drum with its screw shaft and pincers with the sliding shaft, with its pinion and plate, so as by their joint action to draw the split forward and cause the dressed hoop to wind around the drum, and its appendages, being also combined with the cutting or dressing apparatus, so as to constitute a machine substantially as set forth."

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6. For an *Improvement in Washing Machines;* Arthur Mitchell, Aberdeen, Brown county, Ohio, November 6.

The patentee says,—"The nature of my invention consists in constructing a washing machine having a follower that moves up towards the end against which the clothes are washed, parallel with it and in a right line, being steadied in its course by guides and ways; and also in the formation of the end against which the clothes are washed."

Claim.—"What I claim as my invention, is the follower, constructed, arranged, and operating in the manner set forth."

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7. For an *Improvement in Cooking Stoves;* John E. Thomas, Albany, New York, November 6.

The patentee says,—"The nature of my invention consists in constructing a stove having a diving flue on each side and combining therewith non-radiating substance on the outside around the oven; part of the flue being ribbed to extend its radiating surface."

Claim.—"What I claim as my invention, is the combination of the diving flues having an opening into the lower horizontal flue at the front end, with the back flue, the heat passing along the whole length of the oven at the bottom, and up behind so as to surround it, constructed and arranged as set forth. I also claim the combination therewith of the dampers for conducting the heat out more fully under the boilers."

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8. For an *Improvement in Straw Cutters;* Chas. S. Gaylord, Gaylord's Bridge, Litchfield county, Connecticut, November 6.

Claim.—"What I claim as my invention, is the form of the knife as applied to the cutting of hay, straw and stalks; it being so shaped as to divide their volume and their resistance when cut, by presenting and securing for these purposes the action of two cutting edges at the same time."

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9. For an *Improvement in Propelling Vessels;* Sylvester W. Hall, Troy, Rensselaer county, New York, November 6.

The patentee says,—"The nature of my invention consists in making use of the buoyant force of atmospheric air discharged in channels or grooves under the vessel to propel it by causing the air to act in its ascent against an inclined surface of the vessel, by which the buoyant force of the air is transmitted according to the known laws which govern the action of forces of this nature on inclined surfaces and tends to give motion to the vessel in a direction contrary to that in which the surface rises and the air tends to escape."

Claim.—"What I claim as my invention, is, 1st, the application of the buoyant force of air immersed in water to the lower surface or bottom of the boat inclined upwards, as set forth, in combination with such a channel, channels, grooves, or form of contrivance, as may admit the water to flow freely from the bow to supply the place of the air as it escapes toward the stern and prevent its rising up at the sides of the vessel. The peculiar feature of the improvement claimed, is that the air passes in channels or spaces open downward and from the bow, instead of in trunks or recesses closed below, which would prevent the water rising upward into the channels as the air escapes, as has been before known.

"2d. For the purpose of causing the air to issue in distinct jets, or blasts, and directing it into a channel, or into different channels, I claim the use of the slide valves and compartments, as set forth, in combination with the channels or grooves on a surface inclined upward, as set forth."

"3d. For the purpose of moving side ways and turning the boat, I claim the employment of air conveyed through suitable tubes or passages from the blowing or other machinery by which it is furnished to the points of discharge under the fore or after part, or under the fore and after part of the boat, so as to operate on the inclined surface on the sides of the boat, as set forth."

10. For an *Improvement in Lard Lamps;* Thomas Houghton and Robert F. Wallace, City of Philadelphia, Pennsylvania, November 15.

Claim.—"What we claim as our invention, is the peculiar construction of the wick-holder and conductor having the two semi-circular chambers near the top and forming shoulders for suspending it to the screw cap, in the manner and for the purpose set forth."

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11. For an *Improvement in the Air Pump used in Low Pressure or Condensing Steam Engines;* Charles Reeder, City of Baltimore, Maryland, November 15.

Claim.—"What I claim as new, is the manner of arranging the valves of the pump and condenser, and connecting and combining them with each other, so as to render the said pump double acting, whilst its piston is provided with valves as in the common single acting air pump; that is to say, I claim the arrangement of the air pipe with its valve opening into a water space between the upper side of the piston and the head of the cylinder, in combination with the valved piston, the foot valve, and the discharge valves, by which arrangement and combination the apparatus is made to operate as set forth. I have stated that I do not claim either of the individual parts as new, and I consequently limit my claim to the combination as a whole, but without intending to limit myself to any particular form of the respective parts."

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12. For an *Improvement in Coffins;* Christian H. Eisenbrandt, City of Baltimore, Maryland, November 15.

Claim.—"What I claim as my invention, is the combination of a spring catch within the coffin with a rod and ring to be slipped on to the finger of the subject within, as set forth. I also claim the forehead plate in combination with the spring catch and rod or wire, whether by means of the lever, or other means substantially the same, whereby the catch is opened by the motion of the subject's head, as set forth. And, finally, I claim the air plate in the lid of the coffin in combination with the devices above claimed for opening the lid from within, as set forth. It is intended to place the coffin with its inmate in a vault, with a key of the vault deposited inside of its entrance until decomposition takes place, so that should the person not really be dead, life may be preserved."

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13. For an *Improvement in the Table Blow Pipe;* Rufus Somerby, Louisville, Jefferson county, Kentucky, November 15.

Claim.—"What I claim as my invention, is the manner in which I have arranged the blow pipe and furnace in combination with the bellows; the whole being constructed and arranged as set forth."

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14. For an *Improvement in Smut Machines;* John Coleman, Blacklegs, Indiana county, Pennsylvania, November 15.

The patentee says,—"The nature of my invention consists in construct-

ing a runner with spikes standing out at an angle of about 200, more or less, from the periphery and upper face near the edge, the points of said spikes running near the case which, in the cover, has inserted a flanch and spikes near the rim, and also attaching a fan below the upper disk, having a head as broad as the wings are long on their under side, the hole in the middle of said head being large enough to admit air from below."

Claim,—"What I claim as my invention, is the runner having a rasp at its centre and projecting angular spikes at its periphery, constructed and arranged as set forth. I also claim in combination with the rasp above named, the springs around the aperture in the cover, in the manner and for the purpose set forth. Lastly, I claim in combination with the disk above named, the fan having a lower head and tube combined therewith for the purpose of admitting and directing the blast, constructed and arranged substantially as set forth."

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15. For an *Improvement in Rotary Steam Engines;* Ebenezer Ferren, Haverhill, Grafton county, New Hampshire, November 15.

The patentee says,—The nature of my invention consists in forming a rotary engine with two pistons revolving with the shaft in two separate chambers; the steam being let on so as to cause them to revolve in either direction and cut the steam off at any point of the revolution."

Claim.—"What I claim as my invention, is the combination of the slots in the disk (to which the piston is attached, and which works in recess containing the steam ways,) with the four holes in the recess, two for ingress and two for egress, so as to allow the steam to be cut off and work expansively. I also claim in combination with the above, the pistons and cylinder, constructed and arranged in the manner and for the purpose set forth, so as to let the steam into both steam chambers by one operation, their action being regulated by the disk."

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16. For an *Improvement in Modes of Using Volatile Oils for Purposes of Illumination;* B. F. Greenough, Boston, Suffolk county, Massachusetts, November 15.

The patentee says,—"The nature of my invention consists in passing a current of steam from boiling water through chemical oil, spirits of turpentine, or other analogous substance, and conveying the united steam or vapor through proper pipes to be burned, the vapor issuing from the burner by means of the pressure of the steam."

Claim.—"What I claim as my invention, is combining a reservoir having burners attached thereto by pipes or otherwise, with a steam boiler, substantially in the manner set forth, so that the vapor generated by the steam will be forced through the turpentine pipes to the burners under the pressure of the steam, for the purpose set forth."

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17. For an *Improvement in Boot Crimps;* Eli P. Drake, Troy, Rensselaer county, New York, November 15.

Claim.—"I claim the division of the crimp board into parts, as set forth.

I also claim that combination of the lever and pincers upon the foot piece and back board by which the leather is clasped to the foot piece and back board. And here I claim the privilege of using this combination of the lever and pincers upon the block, if I should find it convenient to do so, instead of using the nut and pincers, as set forth. I also claim the combination of the foot piece, back board, block, screw, nut, and pincers, by which combination, when the screw is turned, the block is raised against the foot piece and back board, lifting them upwards and outwards, and at the same time the nut is raised against the pincers, thereby clasping the leather firmly to the block; the result of the whole combined movement being to stretch the leather in three different directions at once, aud crimp it fit for use. I also claim the combination of the foot piece, back board, block, and screw, by which, when the screw is turned, the block is raised against the foot piece and back board, lifting them upwards and outward at the same time; the leather in this case being clasped to the block by the lever and pincers, as in my second claim above mentioned. Wherever pincers are named, I only claim them in combination with other parts of the machine."

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18. For an *Improvement in Grain Cleaners;* F. P. Root, Sweden, Monroe county, New York, November 15.

Claim.—"What I claim as my invention, is the use of the horizontal wheel with pins projecting from its periphery for preventing the endless chain of bars from choking with straw, in combination with the conveyor, as set forth."

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19. For an *Improvement in the Saw Mill for Sawing Timber with a Direct or Compound Level;* James Hamilton, City of New York, November 21.

Claim.—"What I claim as my invention, is the mode of mounting and applying the rotary dog and leveling lever in combination with the slotted guide bar *i*, bar *f*, bar *k*, and lintel, for the purpose and in the manner set forth. And, finally, I wish to be understood as covering all the mechanical variations that shall or may be really or substantially the same."

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20. For an *Improvement in Door Latches and Locks;* Theodore L. Littlefield, City of Philadelphia, Pennsylvania, November 21.

The patentee says,—"The nature of my invention consists, 1st, of a latch bolt case, the shape of which is part round, or cylinder, and part square, into which is to be introduced a latch bolt and a spiral spring, the latter, or spiral spring, being placed around the spindle or round part of the latch bolt, and working inside of the cylinder, or barrel part of the case; also, of a flat sliding bar or thumb piece to move back the latch bolt, which bar or thumb piece passed through the round head or bolt stop fastened to the back end of the latch bolt spindle, and slides backward into or partly through the neck, stem, or straight part of an immovable or stationary knob or knobs, the whole forming a latch for a door. And, 2d, of a combination of the above described latch bolt, round head, or bolt stop, spiral spring and bar, or thumb piece, in connexion with one or more

tumblers, which tumbler or tumblers being moved by a key against a corner of the square part of the latch bolt, and held by a spring or springs, fastens or locks the latch bolt. The latch bolt, spiral spring, the tumbler or tumblers, and the tumbler spring, being placed inside of an oblong case, which may be composed of metal or other substance, in connexion with the other parts, forms a lock for a door."

Claim.—"What I claim as my invention, is making a recess in the neck of the knob in combination with the sliding bolt of the latch having a thumb piece or pin to enter the said recess, as set forth."

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21. For an *Improvement in Stop Cocks;* Francis Joseph Miller, City of New York, November 21.

The patentee says,—"The nature of my invention consists in making the pipe constitute of itself a stop cock, by which, in cases where a cock is necessary, the pipe is rendered more easy of construction, and offers less obstruction to the passage of the fluid."

Claim.—"What I claim is the mode of combining a jet pipe and stop cock; that is to say, making the jet pipe the revolving part of the stop cock, in the manner set forth."

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22. For an *Improvement in Artificial Writing Slates;* John Street, City of Philadelphia, Pennsylvania, November 21.

The patentee says,—"The nature of my invention consists in applying a silicious composition to wood, for the purpose of forming a wooden writing slate."

Claim.—"What I claim as my invention, is a wooden writing slate of a variety of colors, formed by the application of the composition set forth, to smooth surfaces of wood of any desired size and thickness."

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23. For an *Improvement in Umbrellas;* Waring Latting, City of New York, November 21.

Claim.—"What I claim as new and as of my invention, is, 1st, the construction and arrangement of the hollow handle of the umbrella, so that the covers, stretchers, &c., can be attached to or detached from it, substantially as set forth, and when disconnected can be put into said hollow handle, by which means the apparatus becomes a walking stick. 2d. The combination of the cylinder, with its shoulder, latch and button, and screw to receive the runner cylinder and thimble with the grooves and small washer to mount the ribs and form an umbrella that can rotate on its center when in use."

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24. For an *Improvement in Cotton Presses;* W. F. and Chas. J. Provost, Lower Three-Runs, Barnwell county, South Carolina, November 21.

The patentees say,—The nature of our improvement consists in the arrangement of the levers and their mode of operation by means of a capstan turned by horse or other power."

Claim.—"What we claim as our invention, is the combination of the

segment rack with the levers, constructed and arranged in the manner and for the purpose set forth."

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25. For an *Improvement in the Machine for Tapping and Inserting Stop Cocks in Pipes under Hydrostatic Pressure;* Horatio Allen, City of New York, November 21.

Claim.—"What I claim as my invention, is the combination of the levers, which operates the drill stock or stop cock shaft, with the lever and stopper, as set forth, whereby the removal of the drill and the rapid and secure covering of the hole is effected by one operation, and in a similar manner by a single reverse movement the hole is uncovered and the cock inserted."

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26. For an *Improvement in Making Cane Hemp for Making Paper, &c.;* Barzillai C. Smith, Burlington, Burlington county, New Jersey, November 21.

Claim.—"What I claim as my invention, is the method of making what I call cane hemp, by three processes, the one by fluoric acid gas, also the one by lime water or cream of lime and pot ash, or soda solution, and that by high pressure of water or steam."

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27. For an *Improvement in Rotary Bellows;* A. Savage and Hervey Killam, Scottsville, Monroe county, New York, November 24.

Claim.—"What we claim as our invention, is the order and arrangement of any number of bellows in succession, around any given diameter of circle forming a bellows wheel, the centre part of the bellows being moved, and the outsides stationary, forming a double stroke, it being a new arrangement by which we collect atmospheric air into its outer extremity, and force it into the cylinder or shaft of the wheel, and discharge it out at its centre, being wholly done by the power of falling bodies or gravitation, said bodies being so arranged as to vibrate, and of sufficient size and thickness, so as to produce any desired quantity or velocity of air that may be wanted for ordinary purposes."

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28. For an *Improvement in the Method of Working a Floating Dry Dock, in connexion with a platform and basin, by means of which vessels can be raised and deposited on beds or railways, &c.;* Rutherford Moody and Samuel D. Dakin, City of New York, November 24.

The patentee says,—"The nature of our invention consists in providing a basin sufficiently large to receive the dock with a vessel upon it, and to enable the dock to turn around within, if it is desired, with a platform in its bottom, made perfectly level and low enough to admit the water to flow over it at any desired depth; the side walls of the basin to be constructed of timber or stone, or other masonry in the usual manner, and the platform to be made of concrete or stone, or other masonry laid upon the earth, or of piles of timber driven into the earth and capped, with

other timbers framed across their tops, with a plank flooring covered with concrete or stone, or other masonry."

Claim.—"What we claim as our invention, is the employment in combination with a floating dry dock of a level or horizontal platform under water in a basin, made of concrete, masonry, or piles, or in any other manner to receive a floating dry dock, and allow it to float and turn in the basin, and to settle and rest on the platform in any required direction, in connexion, if desired, with bed ways or rail ways upon the shore; the basin to be so shallow compared with the water in which the dock is sunk to receive the vessel, as to receive and form a bed for the said dock, and leave the cradle on which the vessel rests level with the bed or rail ways on the edge of the basin."

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29. For an *Improvement in Ploughs;* James B. Moore, Wilmington, New Castle county, Delaware, November 24.

The patentee says,—"The nature of my invention consists in the peculiar construction of the land side and cutter, and the adaptation of the other parts thereto."

Claim.—"What I claim as my invention, is the land side formed of three plates, constructed and arranged in the manner and for the purpose set forth. I also claim in combination therewith the double cutter, in the manner set forth."

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30. For an *Improvement in Spring Saddles;* Robert Spencer, City of New York, November 24.

Claim.—"What I claim as new, is the giving of elasticity to the horns of a lady's saddle, by making them separate from the body of the tree, and sustaining thereon by means of spiral or other springs, and sliding bolts, whether said springs and bolts be arranged precisely in the manner set forth, or in any other substantially the same. I also claim the manner of arranging the stirrup leather or strap, in the lady's saddle, by bringing it under the body of the horse and passing it through the stirrup bar, for the purpose set forth."

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31. For an *Improvement in Washing Machines for Cleaning Rags;* James Phelps, West Sutton, Worcester county, Massachusetts, November 24.

The patentee says,—"The nature of my invention consists in abstracting the impure water and dirt from the common engine, for washing and beating rags, by means of an octagonal revolving box, raising the water and discharging the same at the centre, at one end, through a cylinder, or otherwise, the box containing buckets for that purpose."

Claim.—"What I claim as my invention, is the employment of a revolving box, having a covering of wire cloth or other suitable material, inside of which are buckets for filtering or straining water, and elevating the same substantially in the manner and for the purpose set forth."

32. For an *Improvement in Cast Iron Plane Stocks;* William Foster, Washington City, District of Columbia, November 24.

The patentee says,—"The nature of my invention consists in forming a recess in the face of the plane stock, into which an adjustable piece of soap stone, or other suitable material, is inserted and regulated by a screw.

Claim.—"What I claim as my invention, is the recess formed in front of the plane iron, or of the forward handle in the face of the cast iron plane, and filled with soap stone, or other suitable material, which is so regulated by a screw substantially as set forth."

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33. For an *Improvement in Gangs of Ploughs;* Thomas Wiard, East Avon, Livingston county, New York, November 24.

The patentee says,—"The nature of my invention consists in attaching to a gang of ploughs, a pole, or shafts, so as to allow the ploughs freedom of action, and at the same time keep a straight furrow."

Claim.—"What I claim as my invention, is the combination of a pole, or shafts, with a frame and gang of ploughs in the manner set forth, in such a way as that they will have an up and down motion, while all lateral motion is prevented in the pole or shafts independent of the ploughs."

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34. For an *Improvement in Machines for Making Hats of Leather, India Rubber, &c.;* Sewell Gleason, City of New York, November 24.

The patentee says,—"The nature of my invention consists in an apparatus by which a piece of leather, india rubber, cloth, or other suitable material is pressed into the form of a hat by one operation."

Claim.—"What I claim as my invention, is the combination of the bed piece and elastic metallic hoop. I also claim in combination with the above the block, cap, and screw for pressing the leather into the bed, as set forth. I also claim the employment of the metal ring, held down by springs, in combination with the block for holding the leather to be pressed, while the block forces it down, and the elastic hoop, as set forth. Lastly, I claim the elastic metalic band formed of a metal ring, the end of which overlap, and which is grooved on the outside in combination with a spiral spring which surrounds it, as set forth."

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35. For an *Improvement in the Method of Making Wrought Iron Cannon;* Salmon Hunt, Woolcotville, Litchfield county, Connecticut, administrator of the estate of Salmon Hunt.

The patentee says,—"The nature of said invention consists in forging a gun or piece of ordnance, by welding to a centre rod called a "forming bar" a succession of plates, so prepared and beveled at their edges as to form longitudinal and transverse laps with each other, and so placed in the formation of the gun as to make the grain of the iron to be in a transverse or nearly transverse direction to its length around the same."

Claim.—"What I claim as my invention, is the particular manner set forth of welding to a centre rod, (which is afterwards to be bored out of the gun,) a laminal succession of plates or billets of iron, in such a man-

ner as to give the direction of the grain of the iron transversely around the body of the gun, or nearly so, upon the principle and in the manner set forth."

List of American Patents which issued in the Month of December, 1843, *with Exemplifications by* CHARLES M. KELLER, *late Chief Examiner in the U. S. Patent Office.*

1. For an *Improvement in Machinery for Straightening and Cutting Veneers and other thin pieces of Wood;* Chauncey E. Warner, City of New York, December 4.

Claim.—"What I claim as my invention, is, 1st, the mode by which the operation of the clamps and their guide points is combined with the feeding rollers, and for the purpose of steadying the material, and feeding at the same time without distress to the feeding rollers; when such combination is applied for feeding the material, to cut veneers, or wooden cards, for boxes or covers, substantially as set forth. 2nd, I claim the cutting of successive veneers, or wooden cards, for boxes or covers, and carrying them forward to the straightening rollers, by the combination of the knife and keeper spring with each other, and with the feeding apparatus, when such entire combination is applied to the purposes set forth. 3rd, I claim the use of the straightening roller and concave guide beneath, for the purpose of drawing the veneers, or cards, out from the knife and lip, and straightening the material in its passage, when such use is applied in the manufacture of veneers, or wooden cards, meant to form boxes or covers; and I claim the combination therewith of the lip, adjusted to direct the successive veneers, or cards, in their exit from the roller and guide, and place the cards collectively together, as set forth."

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2. For an *Improvement in Rotary Steam Engines;* Royal C. Grant, Pomeroy, Meigs county, Ohio, December 4.

The patentee says,—"The nature of my invention consists in using the slide valve in the steam chamber as a cut off, and the apparatus for transferring the steam from one engine to another."

Claim.—"What I claim as my invention, is, 1st, the recess in the valve for a steam way, which cuts off the steam as the valve rises, in the manner and for the purposes set forth. 2nd, I claim the valve box and combination of valves therein, in combination with the cylinder, constructed and arranged as set forth."

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3. For an *Improvement in Carriage Brakes;* Moses S. Woodward, Marshalton, Chester county, Pennsylvania, December 4.

The patentee says,—"My improved manner of constructing the carriage brake is applicable to carriages either with or without springs, its design being to cause the lock pieces which are to bear against the wheels to press in the direction of their axis, notwithstanding any variation in the

distance between the ends of the axles and the bottom of the body of the carriage, such variations being caused by the irregularities of the road."

Claim.—"What I claim as my invention, is the arrangement and combination with the rock shaft and axle, of what I have denominated, the radius bars for preserving the distance unchanged between said rock shaft and axle, notwithstanding the vertical vibration of the axle; and this I claim whether applied to vehicles with two or four wheels, and whether the respective parts be formed precisely in the manner set forth, or in any other in which the same result is attained."

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4. For an *Improvement in Making Paper;* John M. and Lyman Hollingsworth, Boston, Suffolk county, Massachusetts, December 4.

The patentees say,—"The nature of our invention consists in making an exceedingly firm, smooth, and strong paper from the substance generally known as manilla grass, being the fibrous portion of the bark of the wild bananna, (Musa Textilis)."

Claim.—"We claim to be the first discoverers of the fact that the gummy, resinous, or other matters, which bind together the fibres of the substance known as manilla grass, may be so dissolved by the process of boiling in an alkaline ley, that the fibres will become separated, and a material produced capable of being manufactured into paper of the best description. And we consequently claim as our invention, the application of the chemical process of boiling in caustic alkaline ley, substantially in the manner set forth, to the vegetable substance known as manilla grass, for the purpose of preparing the same to be converted into paper."

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5. For an *Improvement in Straw Cutters;* Abel A. Hull, Croton, West Chester county, New York, December 4.

Claim.—"What I claim as my invention, is the way or manner of giving to the knife an oblique draw knife stroke, as it ascends and descends, for the purpose set forth of cutting at the upward as well as the downward stroke, by attaching one end of the knife to a crank, and the middle to an adjustable vibrating rod, as set forth. Also the arrangement of the apparatus for turning the feeding rollers, for feeding or bringing forward the substance to be cut to the knife, as set forth, and the mode of regulating the cut of the straw, by the combination of the lever and screw rod."

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6. For an *Improvement in Weaving Looms;* D. P. J. Murphy and D. Farrier, Aberfoil, Macon county, Alabama, December 4.

The patentees say,—"The nature of our invention consists in drawing back the lathe of the loom by means of tappets on the driving or cam shaft, and throwing it forward by means of a spring."

Claim.—"What we claim as new, is bringing forward the lathe by means of a spring, in combination with the method of drawing back the lathe, as set forth, constructed and arranged as set forth."

7. For an *Improvement in the Method of Effecting Combustion in the Furnaces and Flues of Steam Boilers;* C. E. Detmold, City of New York, December 4.

Claim.—"I claim the arrangement set forth for applying De Faber's invention, by combining furnaces for steam boilers and other purposes, with an hot air chamber or chambers, placed directly behind the grate, in or on the bridge wall, for the purposes of heating and introducing compressed air; and which hot air chamber is pierced on the side opposite to where the fire is, or in the direction of the flues, with numerous small apertures, through which continuous jets of heated and compressed air are forced, amidst the carbonic oxide gas generated in the chamber of combustion in the flues or hearth of the boilers, thereby causing its complete and rapid combustion."

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8. For an *Improvement in the Condenser of Steam Engines;* Henry K. Stephens, Cincinnati, Hamilton county, Ohio, December 4.

Claim.—"What I claim as my invention, is the tubular condenser in which the steam is admitted to circulate around the tubes, whilst the water circulates through them, in combination with the cistern of water surrounding the whole, as set forth."

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9. For an *Improvement in Garlic Machines;* Samuel Farhney, Broomsboro, Washington county, Indiana, December 5.

Claim.—"What I claim as my invention, is the combination of the disks, toothed or serrated circular plates, spring bars, and combs, for separating the garlic from the wheat, with which it is found intermixed, as set forth."

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10. For an *Improvement in Breaking and Screening Coal;* Hopkins Thomas, Beaver Meadow, Carbon county, Pennsylvania, December 5.

The patentee says,—"The nature of my invention consists in using one or more iron rollers, of any given dimensions, and weights sufficient to crush the coal, in combination with a grated platform, said roller or rollers being connected by means of an iron yoke and rod to steam engines, or any other suitable power, which will give it, or them, a reciprocating motion over an iron grate platform, through which the coal is forced by the weight of the roller of rollers. Also, in combining the aforesaid breaking machine with an elevator or carrier, to convey the coal to the breaking machine, and the combination of the breaking machine with a revolving screen and shutes, or conductors, to convey the coal to any mode of transportation."

Claim.—"What I claim as my invention, is the combination of the vibrating rollers with the iron bars or rails, or perforated bed, through which the coals are forced by the rollers, for the purpose of breaking anthracite or bituminous coal, also the combination of the elevator or carrier with the breaking machine, constructed as set forth, by which means the coal can be regularly delivered into the machine; and the combination of the break-

ing machine, constructed as set forth, with the revolving screen and shutes, by means of which the coal is screened from dust, &c."

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11. For an *Improvement in Horse Rakes;* James Maltby, North Branford, New Haven county, Connecticut, December 5.

Claim.—"What I claim as my invention, is the mode of constructing a horse rake, that is to say, by combining a number of rakes with the leading bar, in the manner set forth, the handles of said rakes passing through and turning freely in the leading bar, for the purpose aforesaid; I also claim in combination the brake, constructed and operating as set forth."

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12. For an *Improvement in Sun Dials;* James P. Gardner, Columbia, Maury county, Tennessee, December 5.

Claim.—"I claim the mode of constructing said dials, that is to say, using therefor a hemispherical cup, having the lines laid off upon its inner surface, in the manner set forth, and the gnomon in the centre of the cup, arising from the bottom, all as set forth."

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13. For an *Improvement in Rocking Chairs;* Charles A. Ballard, Boston, Suffolk county, Massachusetts, December 5.

The patentee says,—"This invention consists of an elongated or other proper shaped cushion, suspended at its ends to the tops of two standards, by two rods or pieces of metal, and so that it will swing back and forth, or have a pendulous motion upon pins, or other contrivances of like character, or instead thereof, the said cushion may have journals attached to its ends, which may rest and play in suitable bearings in the tops of the standards. The standards are mounted upon rockers of suitable length and dimensions, and in order to secure the standards in their respective positions, they may be connected together by one or more cross bars. The cushion should be arranged so that it can be readily raised or lowered, to adapt it to the height required by different individuals."

Claim.—"Having thus set forth the nature of my invention, I shall claim the same constructed substantially in the manner set forth."

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14. For an *Improvement in Ploughs;* Peter Eichar, Wooster, Wayne county, Ohio, December 5.

Claim.—"What I claim as my invention, is the combination of the additional connecting bar and plough and braces, with the single plough for connecting the latter into a combined plough, in the manner and for the purpose set forth. I also claim the combination of the adjustable beam with the double plough, in the manner set forth. I likewise claim the manner of locking the land side of the mould board by means of the hook, mortice, pivots, and brace, combined and arranged as set forth."

15. For an *Improvement in Corn and Cob Crushers;* James L. McKnight, Buchanan, Botetourt county, Virginia, December 15.

The patentee says,—"The nature of my invention consists in placing two cylinders in a frame, one above another, and run in opposite directions, and being furnished with a concave, but placed on opposite sides."

Claim.—"What I claim as my invention, is the manner in which I have combined the upper cylinder and its concave with the lower cylinder and its concave, the said parts being arranged and constructed substantially as set forth."

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16. For an *Improvement in Tuyeres;* Zadock H. Mann, Lowell, Middlesex county, Massachusetts, December 15.

Claim.—"What I claim as my invention, is, 1st, the use of the scroll or spiral pipe which takes the air from the nozzle of the bellows, and carries it around, as set forth, giving the air a whirling motion as it leaves the mouth of the tuyere. 2nd, I claim as my invention the method of shutting up the exterior orifice, or mouth, by raising the shaft by a male and female screw, or by a damper, so that the damper shall completely close or shut up the mouth; and the combination of an adjustable interior blast, or mouth, with the exterior mouth or blast, constructed and operating as set forth."

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17. For an *Improvement in Coating Water Pipes;* Jonathan Ball, City of New York, December 15.

Claim.—"What I claim as my invention, is the application of hydraulic cement or water cement, as a coating upon the interior surface of metallic water pipes, to prevent the corrosion and oxidation of the metals of which the pipes are composed. Also the means by which it is accomplished, as set forth."

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18. For an *Improvement in Door Springs, for Closing Doors;* Charles Ellis, Boston, Suffolk county, Massachusetts, December 15.

Claim.—"What I claim as my invention, is making the door spring of two springs, (instead of one as heretofore,) in combination with the two rods, jointed together, as set forth, the said door spring being arranged within the door and door frame, and operating substantially as set forth."

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19. For an *Improvement in Axles of Railway Cars;* Nathaniel Miller, Franklin, Norfolk county, Massachusetts, and Edward Bancroft, Providence, Rhode Island, December 15.

Claim.—"We claim the method of constructing the axles of a railway carriage, viz: by means of an outer metallic shell or tube, in combination with an inner cylindrical or other suitable shaped wooden core, fitted therein and acting therewith, substantially in the manner set forth."

20. For an *Improvement in Valves for Hydrants;* Horatio H. C. Kelsey, City of New York, December 15.

The patentee says,—"The nature of my invention consists in making a circular surface valve for letting on, and off, the water from hydrants, or any other apparatus, the surface valve being so constructed as to cut the water off with much more ease than the ordinary faucit or cock, thereby preventing, in a great measure, the reaction of the head of water back on the lead pipes, which invariably bursts them; also in providing said surface valve with a circular recess, forming a passage, for the purpose of letting the waste water off from the egress pipe, so as to prevent freezing in the winter."

Claim.—"What I claim as my invention, is the general arrangement of the surface valve, in combination with the circular recess, forming a passage for letting off the waste water.

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21. For an *Improvement in Bee Hives;* Thos. D. Howell, Zanesville, Muskingum county, Ohio, December 15.

Claim.—"What I claim as my invention, is the combination of the vibrating traps with the lighted case, arranged and operated in the manner and for the purpose set forth. And I claim said combination, whether applied to the common bee hives, or to any description of bee hives, for the purpose of excluding the moth or other insects therefrom, or for any other purpose."

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22. For an *Improvement in the Buff for Polishing Spoons and other articles;* Luther Boardman, East Haddam, Middlesex county, Connecticut, December 15.

Claim.—"What I claim as my invention, is the uniting of the pieces of leather composing the buff, by stitching them to each other, at a proper distance from their outer edges, without the employment of any kind of cement or unyielding substance; the same being effected in the manner and for the purpose set forth."

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23. For an *Improvement in Valves for Reversing the Action of Steam Engines;* Henry A. Morrill, Boston, Suffolk county, Massachusetts, December 20.

Claim.—"What I claim as my invention, is the combination of the three way reversing cock, with the induction and eduction pipes of a steam valve apparatus, or the double branch pipes of a double vibrating cylinder, having passages as set forth, or otherwise suitably arranged."

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24. For an *Improvement in Seed Planters;* Henry Todd, Oxford, Grafton county, New Hampshire, December 15.

Claim.—"I claim the combination with the endless belt and discharging passage of the bell upon which the seeds are thrown, in the manner and for the purpose set forth. I also claim the combination of the flat

angular clearing and surface board, with the angular furrow plough and coverers, arranged upon its lower surface, the object of the said clearing board being to remove any impediment to the correct action of the furrow-opener and coverers, and to regulate the depth to which the seed are to be planted."

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25. For an *Improvement in Shingle Machines;* J. C. Gillet, Bloomfield, Oakland county, Michigan, December 20.

The patentee says,—"The nature of my invention consists in the construction of a machine which will cut perfect shingles from solid timber."

Claim.—"What I claim as my invention, is the manner in which I have arranged and combined the hoppers or boxes to receive the stuff to be cut, the horizontal revolving table and the knives attached thereto, said knives being so arranged as that one shingle shall be cut by one knife, before the second knife begins to operate, the butt being cut by one knife towards the shaft, and by the other towards the outer periphery. The respective parts being arranged and combined substantially as set forth."

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26. For an *Improvement in the Bench Vise;* Jeremiah Peck, Waterbury, New Haven county, Connecticut, December 20.

Claim.—"What I claim as my invention, is the sliding jaw, in combination with the jointed jaw, as set forth, the former being used to set the vise to any desired size, and the latter to gripe."

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27. For an *Improvement in the Soles of Boots and Shoes;* William H. Elsegood, Philadelphia, Pennsylvania, December 20.

Claim.—"What I claim as my invention, is the introduction and use of a felted horse hair sole, in place of the scraps of leather now used, called "bottom filling," and a silk oil cloth sole in place of gum elastic. I use a whalebone shank piece in place of leather, but make *no claim* to originality; these articles worked together according to the rules laid down will form a *dry*, warm, and elastic boot or shoe."

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28. For an *Improvement in Grain Rakes;* William Gates, Barre Centre, Orleans county, New York, December 20.

Claim.—"What I claim as my invention, is the manner in which I have combined and arranged the raves and runners, and the manner in which I have combined, with the raves and runners, the posts or standards and connecting pieces, so as to leave an open space in the middle of the rake, to admit of binding the straw, as set forth."

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29. For an *Improvement in Bedstead Fastenings;* Joseph Guild, Cincinnati, Hamilton county, Ohio, December 20.

Claim.—"What I claim as my invention, is the cast iron cylinder, introduced into the bed post and fastened with the pin, in the manner set forth."

30. For an *Improvement in Fences;* Isaac Van Amburg, Watertown, Jefferson county, New York, December 20.

Claim.—"What I claim as my invention, is the mode of supporting a fence by detached posts, that do not raise the fence, having no necessary connexion with it, except to keep it in its vertical position, and is equally applicable to posts and rails, as posts and boards."

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31. For an *Improvement in Sewing Machines;* Geo. H. Corliss, Greenwich, Washington county, New York, December 27.

Claim.—"What I claim as my invention, is, 1st, the particular combination of mechanism, by means of which the rectilinear and lateral movements of the awls are produced, viz: the grooved plate and rectangular lever, in connexion with the arm applied to the awl handle, and groove in the standard, between the guide boxes of the awl handle, the said awls being inserted in the bent arms of their handles, and the whole being otherwise arranged substantially as set forth.

"2nd. The particular mechanism by means of which the peculiar movements of the handles are produced, and by which they are introduced and drawn through the aperture made by the awls, viz: the needle shafts; the same operating, being constructed and actuated substantially as set forth.

"3rd. The peculiar combination of levers which is employed in the needle shafts, viz: the finger levers, and transverse levers, the same being constructed and operating substantially as set forth.

"4th. The peculiar method of forming stitches after the ends of the threads have been passed through the aperture made by the awls, viz: by confining said ends in a fixed position, as by the pliers, and then drawing the threads out in a doubled form by means of the pulleys, which are made capable of yielding to a given force, in the manner set forth, and thus accommodate themselves to the varying lengths of the threads, being for this purpose attached to the tripping levers, and said tripping levers being connected with the springs, the whole being arranged and constructed as set forth, and applied upon endless chains, or operated substantially in the same manner by mechanism of similar character.

"5th. I further claim making the needle with recesses and depressions, and one point of the needle below the other, the same being for protecting the thread in direct proximity with the eye, as set forth.

"6th. I also claim the particular mechanism which prevents the entanglement of the threads during the progress of the sewing operation, viz: the vibrating levers, the same being actuated in one direction by a weight or spring, or both combined, whilst in a contrary direction they are actuated by means of the threads which are *passing into* the aperture, and also by their own impetus, the said levers being provided at their front ends with guides, springs, or elastic branches, which enable them to *fasten themselves* upon the threads which are *passing out* of the aperture, and also permit the threads to extricate themselves from the levers at the proper juncture, the whole being arranged and constructed as set forth."

32. For an *Improvement in the Blooming Forge used in the Manufacture of Wrought Iron;* Simeon Guilford, Lebanon, Lebanon county, Pennsylvania, December 27.

Claim.—"What I claim as my invention, is the mode of constructing and using what is set forth as the cupola fire in combination with a forge fire, commonly called a blooming forge, for converting iron ore, forge cinder, or other metal into wrought iron, substantially as set forth."

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33. For an *Improvement in Machines for Combing Wool;* F. A. Calvert, City of New York, December 27.

Claim.—"What I claim as new, is, 1st, the combining with the vertical wheel of a flexible comb belt, said belt passing round two drums, or rollers, and being thereby made capable of delivering the wool on to the teeth, in a direction corresponding with the plane in which they revolve. I likewise claim the use of such a flexible comb, that is to say, having teeth formed on plates of metal, and attached to the flexible belt, whether combined with the wheel or employed for a like purpose in any other combing machine. I also claim the carrying down of the long and other wool, which has not been taken off by the drawing rollers to be worked over again, this being effected by the backing rollers and the toothed belt, the latter reconveying it to the flexible belt to be worked over again.—Lastly, I claim the manner of arranging and using what I have denominated the independent intersecting toothed wheel, for the purpose set forth."

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34. For an *Improvement in Machinery for Manufacturing Horse Shoes;* William Gibson, Troy, Renssalaer county, New York, December 27.

Claim.—"What I claim as my invention, is, 1st, the combination and arrangement of the parts concerned in the cutting off, the griping and the creasing, and the punching, so that these operations shall be performed by the cutters, the dies, the creasers, and punchers, all operating as set forth.

"2nd. I claim the manner of combining and arranging the respective parts of the apparatus for bending the shoe, as set forth, said apparatus consisting of the stationary double rack, with the former on its under side, the sliding table, the two cog wheels with their benders, and the sliding bar by which the piece is held against the *former*, the whole apparatus being constructed and operated substantially as set forth."

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35. For an *Improvement in the Method of Propelling Boats;* James H. Street, Philadelphia, Pennsylvania, December 27.

Claim.—"What I claim as my invention, is the employment of a propelling plate made to slide back and forth in grooved arms, and through a slot or mortise, in the axle from which it receives its motion; the respective parts of the apparatus being combined, arranged, and operating, substantially as set forth."

36. For an *Improvement in Hay Presses;* Samuel Hewitt, Allensville, Switzerland county, Indiana, December 30.

Claim.—"What I claim as my invention, is filling the box with the substance to be pressed into bale, by means of a driver raised by machinery, and made to descend upon the substance in the box, successively by gravity as the follower descends, whether effected in the manner set forth, or in any other substantially the same."

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